TSD File Inventory Index

Date: November 15, 2006

Initial: C.A.M. Meneses

Facility Name: Paramount Refining Group (Blue Island Refinery)

Facility Identification Number: ILD 005, 109 822

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.2 Closure/Post Closure Plans, Certificates, etc		**D. 2 Corrective Action/Facility Investigation**	
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.5 CMI QAPP		.8 Endangered Species Act	
.6 CMI Correspondence		.9 Environmental Justice	

Note: Transmittal Letter to Be Included with Reports.
Comments: _____

MAYER, BROWN & PLATT

190 SOUTH LA SALLE STREET

CHICAGO, ILLINOIS 60603-3441

RUSSELL R. EGGERT
DIRECT DIAL (312) 701-7350
DIRECT FAX (312) 706-9111
reggert@mayerbrown.com

MAIN TELEPHONE
312-782-0600
MAIN FAX
312-701-7711

September 8, 1997

VIA MESSENGER

Unites States Environmental Protection Agency,
Region 5
Enforcement and Compliance
Assurance Branch (DRE-8J)
77 West Jackson Boulevard
Chicago, Illinois 60604
Attention: Allen T. Wojtes

Re: Clark Refining & Marketing, Inc.

Dear Mr. Wojtes:

Enclosed are Clark Refining and Marketing, Inc.'s Second Objections And Response To RCRA Section 3007 Information Request of July 30, 1997.

You will note that two of the documentary attachments, numbers 4 and 5, are not enclosed with this submission, and will be supplied shortly. Copies of these documents were misplaced during the duplicating process, after they were delivered to me by Clark, and the responsibility for the delay is mine. I apologize for any inconvenience this may cause.

Very truly yours,

Russell R. Eggert

Russell R. Eggert

cc: Richard Keffer (w/encl.)
Bill Irwin (w/encl.)

6222204.1 90897 1241C 95228409

bcc: John C. Berghoff, Jr. (w/encl.)
Tom Kuslik (w/encl.)

CLARK REFINING & MARKETING, INC.'S SECOND OBJECTIONS AND RESPONSE TO RCRA SECTION 3007 INFORMATION REQUEST OF JULY 30, 1997

Clark Refining and Marketing, Inc. ("Clark") objects and responds to the information request under Section 3007 of the Resource Conservation and Recovery Act received on July 30, 1997 as follows:

General Objections

1. Clark objects to the information requests to the extent that they seek material beyond the scope of EPA's authority under RCRA.

2. Clark objects to the information requests on the ground that they are repetitive, duplicative, and unreasonably burdensome.

3. Clark objects to the information requests to the extent that they seek information protected by the attorney-client privilege or the attorney work product doctrine.

Responses

Request

1. According to an operator's logbook and discussions with Clark personnel during the NEIC inspection, the contents of Clark's desalter were emptied into the Tank 29 dike on at least one occasion. Set forth each occasion on which the contents of the desalter were emptied into the Tank 29 dike and the amount.

   a) What is the construction of the area inside of the dike?

   b) Is the area inside of the dike lined?

   c) Was the dike lined when Clark emptied the desalter into the dike?

   d) Were any notifications made to regulatory agencies regarding the placement of the desalter contents into the dike?

e) Would the desalter contents be expected to exhibit any hazardous waste characteristics?

f) When the desalter was emptied in the tank 29 dike, was a hazardous waste determination made?

g) Were any samples collected or analyses run? If so, provide documentation of any hazardous waste determinations, sampling, and analysis performed before placing the material in the dike.

h) Was the material ultimately removed from the diked area? Provide any available documentation describing waste determinations and management of the material.

i) Provide all documentation related to your answer to these questions.

Response

1. Clark objects to the question because it misstates the facts. Subject to and without waiving the objection or the General Objections, Clark states that only the water layer of the desalter was discharged into the Tank 29 dike, on June 23, 1995. Clark is not aware of any other such discharges.

a) Tank containment dike is constructed of compacted soil, with approximately three inches of aggregate on top.

b) Clark objects to this question as vague, since "lined" is not defined. Subject to and without waiving this objection or the General Objections, the containment area qualifies as secondary containment under applicable SPCC rules.

c) See response to b) above.

d) No. Answering further, no notifications were required.

e) Clark objects to this question because it misstates the facts. Subject to and without waiving this objection or the General Objections, the desalter water layer would not be expected to exhibit any hazardous waste characteristics.

f) Clark objects to this question because it misstates the facts. Subject to and without waiving this objection or the General Objections, no.

g) No.

h) Yes. See document 03971612, previously supplied and hereby incorporated by reference.

i) See document 03971612, previously supplied and hereby incorporated by reference.

Request

2. Previously answered.

Request

3. Previously answered.

Request

4. Black material was observed by NEIC around 59 sump, and on the ground inside the dike around Tanks 51 and 59, especially on the southern portion of the diked area (north of the warehouse, but inside of the tank dike).

   a) What are the sources of the contamination inside the dike of Tanks 51 and 59, and around the 59 sump?

   b) Has material been excavated from these areas in the past? List the date of each occasion the material has been excavated, the results of any hazardous waste determination made on the materials, including any analytical information, and the disposition of the material.

   c) Provide all documentation related to your answer to these questions.

Response

4. Clark objects to this question as vague and imprecise. Subject to and without waiving the objection or the General Objections, Clark states:

a) Possible sources include any of the following: Tank 51 stores asphalt and tank 59 is the equalization tank for process water that is fed to the API separator. The 59 sump receives oil that is manually decanted from tank 59. The sump also receives oil that is picked up from locations in the refinery by the vacuum truck. The liquid in the 59 sump is pumped to the slop oil tanks (Tanks 63 and 65). The slop oil will be processed in the crude unit. The pumps on the 59 sump are automatically operated via a level controller. In the past, the level controller has malfunctioned and the pumps have not turned on to pump down the level. The level in the sump would rise and oil would overflow the sump into the tank dike. This oil would then be vacuumed up and placed in the slop oil system.

b) Clark records indicate that material was excavated from the dike four times since January 1, 1993. The soil removed was placed in roll off boxes and shipped off site as non-hazardous waste. Process knowledge was used to characterize the waste, and no analyses were conducted of the soil.

c) Manifests for shipping the waste to offsite disposal facilities are being assembled and will be submitted as Attachment 4.

Request

5. Sheens have been observed by NEIC inspectors on water beneath the inlet pipe to tank dike 55 from Outfall 1B, and black stains were observed around the inside of the dike.

   a) Have samples been collected of the liquid in the dike? If so, provide copies of any analytical information available.

   b) Has Clark removed sludge, solids or any material(s) from the dike of Tank 55? Was a waste determination made on the materials(s)? What was the disposition of the materials(s)?

   c) Provide all documentation related to your answer to these questions.

Response

5. Clark objects to this question as vague and imprecise. Subject to and without waiving this objection or the General Objections, Clark states:

   a) No.

   b) Yes. Yes. Lawfully disposed off-site.

   c) Responsive documents are being assembled and will be submitted as Attachment 5.

Request

6. Provide a written explanation of how the material inside of the red rolloff box, observed by NEIC during the March 1997 site visits, was generated. Include the history of the contents of Tank 78. The rolloff was located north of the overflow pit inside of the dike of Tank 52. When the rolloff was first observed by NEIC it was not marked. A hazardous waste label was added by Clark, with the waste number D008. "Tank 78" was also marked on the label, and a date of "2/3/97." Elva Carusiello indicated that the final hazardous waste determination had not been done on the material, and that the information on the label was based on discussions with refinery personnel. What was the final determination of the regulatory status of the material, and what was the final disposition of the waste? Provide all documentation related to your answer to this question.

Response

6. The material in the red roll-off, box number 20-930, was generated from the tank clean out of Tank 78. Tank 78 normally stores diesel fuel and has stored only diesel fuel according to tank farm personnel. One person had said that it may have stored gasoline a long time ago. Therefore the D008 waste label was affixed to designate the possibility of the waste containing lead. A sample was taken to determine if the tank bottoms contained lead. The analytical showed that lead was present, but well under the regulatory TCLP limit. Since lead was present at some level it was determined that it should be characterized and disposed of as leaded tank bottoms. The Tank 78 waste was shipped off site, for incineration, to Trade Waste Incineration, Inc. in Sauget, IL. under a pre-existing "Leaded Tank Bottoms" profile. The manifest and laboratory report is attached as Attachment 6.

Request

7. A September 18, 1995 revision of the RCRA contingency plan was provided to NEIC during the week of March 3, 1997. During the week of March 17, 1997, Clark provided a March 20, 1997 transmittal letter, indicating that a contingency plan was distributed to local emergency services.

   a) Which version of the contingency plan was transmitted with the letter?

   b) Clark personnel indicated that the revised contingency plan may have been distributed during meetings prior to March 20, 1997. If so, which version of the plan was distributed, and what meetings was Clark referring to?

   c) When was the last date, prior to March 20, 1997, that a contingency plan was provided to local emergency services, including the on-site emergency services?

   d) Provide all documentation related to your answers to these questions.

Response

7. a) March, 1997.

b) Available records do not indicate any except March, 1997.

c) Available Clark records do not indicate any except March, 1997, but the Village of Alsip has indicated that if an earlier submission had not been made it would have initiated an inquiry, and it did not do so, thus indicating that a prior timely submission had in fact been made.

d) None available at this time other than the contingency plan itself; investigation continues.

Request

8. During the NEIC inspection on March 19, 1997, Bill Irwin indicated he had attended training provided by U.S. EPA Region 5, and that Clark had not made further efforts to comply with the RCRA air emissions (Subpart CC) requirements, and no documentation was available regarding efforts to comply.

a) Provide the location and the date of the training session attended by Bill Irwin.

b) Provide any other information regarding Clark's efforts to determine which wastes are subject to the RCRA air emissions requirements (Subparts BB and CC), and dates the determinations were made.

Response

8. Clark objects to this question because it misstates the facts. Subject to and without waiving this objection or the General Objections, Clark states:

a) March 11, 1997, Collinsville, Illinois.

b) Clark has been and continues to diligently review and evaluate its facility in order to ensure continued compliance if, when the regulations become

effective on December 8, 1997, the regulations apply to the Blue Island refinery.

Request

9. Previously answered.

Request

10. With respect to all wastes generated by Clark at its Blue Island, Illinois facility, other than office waste, provide the following information:

a) a description of the waste stream;

b) the testing or monitoring of the waste stream, if any, conducted by Clark or on behalf of Clark by one of its contractors;

c) the waste determinations made by Clark with respect to such waste stream; and

d) how each waste stream is managed.

Provide copies of all documentation related to your answer to this question, including, for the period of January 1, 1993 to the present, copies of all analyses and sampling results for such waste.

Response

10. Clark objects to this question on the ground that it is overbroad and exceeds EPA's information gathering authority under RCRA. Subject to and without waiving this objection or the General Objections, and construing the question to encompass only solid wastes regulated by RCRA, Clark states:

Hazardous Wastes

API sludge (K051), DAF float (K048), T59 sump sludge (F037) and API overflow pit sludge (K051) are all listed wastes and are handled similarly. When it is necessary to clean the API Separator or any of the other units, a contractor

with 40 hour trained personnel is scheduled to clean them using a vacuum truck and a centrifuge to dewater the sludge. The dewatered sludge is transferred to a container (roll-off bin) for disposal by thermal destruction.

Bundle Cleaning sludge (K050) - the environmental department is notified prior to cleaning heat exchanger bundles in order to prepare for managing the waste. Bundle cleaning sludge is collected after the heat exchanger cleaning process is complete and is transferred to a roll-off bin for disposal at a subtitle C landfill such as Adams Center, Emelle or Model City by 40 HR trained personnel (either internally or contractor). The roll-off bin is labeled with a hazardous waste generator's label. It is manifested and transported to a landfill when it is full or within 90 days, whichever is shorter.

Normally these wastes are characterized by generator's knowledge. Periodically, wastes from this category are analyzed by a certified laboratory to confirm knowledge of the waste's characteristics.

Special Wastes

Special waste streams which have been profiled include: spent mixed catalyst, petroleum contaminated soil, petroleum contaminated material, caustic contaminated soil, water filter scale and cooling tower sludge and general refinery sludge.

Normally, special waste disposal is scheduled by maintenance or operations. In general, Clark uses generator's knowledge to determine the waste classification. If there is a potential for the waste to be a characteristic hazardous

waste, it is sampled and analytical is completed on the sample by a certified laboratory for classification at the time of generation. The waste is then containerized, labeled and manifested for proper disposal.

Attached as Exhibit 10 is the roll-off bin summary sheet (1995 to present), waste manifest summary sheets, analytical reports and waste manifests from January 1, 1993 to present. The roll-off bin summary sheet was not initiated until 1995.

11. Provide the following notarized certification by a responsible company officer:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in responding to this information request for the production of documents. Based on my review of all relevant documents and inquiry of those individuals immediately responsible for providing all relevant information and documents, I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Bill Irwin
Interim Environmental Manager

RCRA ATTACHMENT 6

STATE OF ILLINOIS — ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

State Form LPC 62 8/81 IL532-0610

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 6-89) Form Approved. OMB No. 2050-0039, Expires 9-30-96

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. I L D 0 0 5 1 0 9 8 2 2 — Manifest Document No. 9 7 3 0 1

2. Page 1 of 1

Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address / Location If Different

CLARK REFINING & MARKETING INC
131 STREET & KEDZIE AVENUE
BLUE ISLAND, IL 60406

4. *24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS* (888) 353-2387

A. Illinois Manifest Document Number IL 7272181 FEE PAID IF APPLICABLE

B. Illinois Generator's ID 1 0 3 1 0 2 4 0 0 0 5

5. Transporter 1 Company Name: OZINGA TRANSPORTATION, INC.

6. US EPA ID Number: I L D 9 8 2 0 6 7 1 7 5

C. Illinois Transporter's ID 1 0 7 0

D. (800) 474-6874 Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. Illinois Transporter's ID

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address:
TRADE WASTE INCINERATION, INC.
7 MOBILE AVENUE
SAUGET, IL 62201-1069

10. US EPA ID Number: I L D 0 9 8 6 4 2 4 2 4

G. Illinois Facility's ID 1 6 3 1 2 1 0 0 0 9

H. Facility's Phone (618) 271-2804

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ HAZARDOUS WASTE, SOLID, n.o.s. 9,NA3077,III (D008,D018,K052)	001	CM	00020	Y	EPA HW Number XXK052 / Authorization Number 0 9 0 0 0 0 1
b.					EPA HW Number XX / Authorization Number
c.					EPA HW Number XX / Authorization Number
d.					EPA HW Number XX / Authorization Number

RECEIVED
MAR 27 1997
CLARK REFINING
ENVIRONMENTAL DEPT.

J. Additional Description for Materials Listed Above
A)LEADED TANK BOTTOMS/BU558B /WIP # 272210
A.E.T.S.-P.O.# 970008-4703 SID 164004
OZINGA-P.O. # 950045-11980 BOX #20-930

K. Handling Codes for Wastes Listed Above In Item #14

15. Special Handling Instructions and Additional Information
for manifest discrepancies call 773-646-8331

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name	Signature	Date (Month Day Year)
ELVA CARUSIELLO/ASST.ENV.MGR.	Elva Carusiello	0 3 2 1 9 7

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
JOHN FRISON	John Frison	0 3 2 1 9 7

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

TRANSPORTER

19. Discrepancy Indication Space

0997-10859

FACILITY

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name	Signature	Date (Month Day Year)
Kim Krug	Kim Krug	032497

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1989, Chapter 111 1/2, Section 1004 and 1022, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

COPY 1. TSD MAIL TO GENERATOR

95733

In case of a spill call the Illinois Office of Emergency Response at 217/782-7860 and the National Response Center at 800/424-8802 or 202/426-2675.

STATE OF ILLINOIS — ENVIRONMENTAL PROTECTION AGENCY · DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

State Form LPC 62 8/81 IL532-0610

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 6-89)

Form Approved. OMB No. 2050-0039, Expires 9-30-96

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. I L D 0 0 5 1 0 9 8 2 2 — Manifest Document No. 9 7 3 0 1

2. Page 1 of 1

Information in the shaded areas is not required by Federal law, but is required by Illinois law.

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CLARK REFINING & MARKETING INC
131 STREET & KEDZIE AVENUE
BLUE ISLAND, IL 60406

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A. Illinois Manifest Document Number IL 7272181 FEE PAID IF APPLICABLE

B. Illinois Generator's ID 0 3 1 1 0 2 4 0 0 0 5

5. Transporter 1 Company Name: OZINGA TRANSPORTATION, INC. — 6. US EPA ID Number: I L D 9 8 2 0 6 7 1 7 5

C. Illinois Transporter's ID 1 0 7 0

7. Transporter 2 Company Name — 8. US EPA ID Number

D. (800) 474-6874 Transporter's Phone

E. Illinois Transporter's ID

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address — 10. US EPA ID Number

TRADE WASTE INCINERATION, INC.
7 MOBILE AVENUE
SAUGET, IL 62201-1069

I L D 0 9 8 6 4 2 4 2 4

G. Illinois Facility's ID 1 6 3 1 2 1 0 0 0 9

H. Facility's Phone (618) 271-2804

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ HAZARDOUS WASTE, SOLID, n.o.s. 9,NA3077,III (D008,D018,K052)	001	CM	00020	Y	EPA HW Number XXK052 Authorization Number 0 9 1 0 1 0 1 1
b.					EPA HW Number XX Authorization Number
c.					EPA HW Number XX Authorization Number
d.					EPA HW Number XX Authorization Number

J. Additional Description for Materials Listed Above

A)LEADED TANK BOTTOMS/BU5588 /WIP # 272210
A.E.T.S.-P.O.# 970008-4703 CID 164004
OZINGA-P.O. # 950045-11980 BOX #20-930

K. Handling Codes for Wastes Listed Above In Item #14

15. Special Handling Instructions and Additional Information

for manifest discrepancies call 773-646-8331

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; **OR,** if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: ELVA CARUSIELLO/ASST.ENV.MGR. — Signature — Date: Month Day Year 0 3 2 1 9 7

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year 0 3 2 1 9 7

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

0997-10860

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name — Signature — Date: Month Day Year

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1989, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

COPY 6. GENERATOR'S COPY

In case of a spill call the Illinois Office of Emergency Response at 217/782-7860 and the National Response Center at 800/424-8802 or 202/426-2675.

5/17/96 LAND DISPOSAL NOTIFICATION AND CERTIFICATION FORM (UTS) TWI-BU5588

Generator Name: CLARK OIL & REFINING CORP Manifest Doc. No.: 97301

Profile Number: BU5588 State Manifest No: IL7272181

s this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Nonwastewater X Wastewater _
f this waste is subject to any California List restrictions enter the letter from below (either A, B.1, or B.2) next to each restriction that is applicable:
___ HOCs, ___ PCBs, ___ Acid, ___ Metals, ___ Cyanides

3. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory. Spent solvent and California List treatment standards are listed on the following page. If F039, multi-source leachate applies those constituents must be listed and attached by the generator. If D001, D002, or D012-D043 requires treatment of the characteristic and meet 268.48 standards, then the underlying hazardous constituent(s) present in the waste must be listed and attached.

REF #	4. US EPA HAZARDOUS WASTE CODE(S)	5. SUBCATEGORY ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE, SIMPLY CHECK NONE		6. HOW MUST THE WASTE BE MANAGED? ENTER LETTER FROM BELOW
		DESCRIPTION	NONE	
1	D008		X	A
2	D018	Non CWA		A
3	K052		X	A
4				
5				

To identify F039 or D001, D002, D012-D043, underlying hazardous constituent(s), use the "F039/Underlying Hazardous Constituent Form" provided (CWM-2004) and check here: X
If no UHCs are present in the waste upon its initial generation check here:
To list additional USEPA waste code(s) and subcategorie(s), use the supplemental sheet provided (CWM-2005-B) and check here:

HOW MUST THE WASTE BE MANAGED? In column 7 above, enter the letter (A, B1, B2, B3, C, ,D or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B2, B3, or D, you are making the appropriate certification as provided below.

A. RESTRICTED WASTE REQUIRES TREATMENT
This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268 Subpart D, 268.32, or RCRA Section 3004(d).
__ For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."

B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS
"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based upon my inquiry of those individuals immediately responsible for obtaining this information. I believe that the treatment process has been operated and maintained properly so as to comply with the performance levels specified in 40 CFR part 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d) without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

B.2 RESTRICTED WASTES FOR WHICH THE TREATMENT STANDARD IS EXPRESSED AS A SPECIFIED TECHNOLOGY (AND THE WASTE HAS BEEN TREATED BY THAT TECHNOLOGY)
"I certify under penalty of the law that the waste has been treated in accordance with the requirements of 40 CFR 268.42. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS
"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based upon my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by incineration in units operated in accordance with 40 CFR Part 264 Subpart O or Part 265 Subpart O, or by combustion in fuel substitution units operating in accordance with applicable technical requirements, and I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

C. RESTRICTED WASTE SUBJECT TO A VARIANCE
This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 7 above.
__ For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."

D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT
"I have determined that this waste meets all applicable treatment standards set forth in 40 CFR Part 268 Subpart D, and all applicable prohibition levels set forth in Section 268.32 or RCRA Section 3004(d), and therefore, can be land disposed without further treatment. A copy of all applicable treatment standards and specified treatment methods is maintained at the treatment, storage and disposal facility named above." "I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all applicable prohibitions set forth on 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting false certifications, including the possibility of a fine and imprisonment."

E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS
This waste is a newly identified waste that is not currently subject to any 40 CFR Part 268 restrictions.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature [signature] Title ASST ENV. MGR Date 3-21-97

LAND DISPOSAL NOTIFICATION AND CERTIFICATION FORM (UTS) -REVERSE SIDE TWI-BU5588

SOLVENT AND CALIFORNIA LIST TREATMENT STANDARDS

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, and/or this hazardous waste is subject to any prohibitions identified as California List restrictions (40 CFR 268.32 and/or RCRA Section 3004(d)), then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001, D002, or D012-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

SOLVENT WASTE TREATMENT STANDARDS					
F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s).	Treatment Standard[1]		F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s).	Treatment Standard[1]	
	Wastewaters	Nonwastewaters		Wastewaters	Nonwastewaters

[1] All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nowastewater are mg/kg.

CALIFORNIA LIST TREATMENT STANDARDS--40CFR 268.32,40 CFR 268.42 and RCRA Section 3004(d)
A waste must first be designated as a US EPA Hazardous waste before the waste can be subject to the California List restrictions.

Restricted waste description	Prohibition	Treatment Standard
Liquid* or nonliquid wastes containing Halogenated Organic Compounds listed in 40 CFR 268, Appendix III	Liquid* wastes: Greater than or equal to 1.000 mg/l Nonliquid wastes: Greater than or equal to 1.000 mg/kg	40 CFR 268.42(a)(2) - INCIN or FSUBS
Liquid* wastes containing Poly Chlorinated Biphenyls (PCBs)	Greater than or equal to 50 ppm	40CFR 268.42(a)(1) - INCIN or FSUBS Also see 40 CFR 761.60 and .70
Liquid* wastes containing Metals Note: Hazardous wastes containing As, Cd, Cr, Hg, Pb, or Se must be evaluated if not characteristically hazardous for that metal	One or more of the following metals (or elements) at concentrations greater than or equal to the following: Nickel and/or compounds as Ni: 134mg/l Thalium and/or compounds as Th: 130mg/l	RCRA Section 3004(d)

* - For the definition "liquid" refer to Method 9095, the Paint Filter Liquids Test from EPA manual SW-846

SUBCATEGORY REFERENCE

D001:
A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a)(1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a)(1) High TOC subcategory, that are managed in CWA/CWA-equival or Class I SDWA systems.
C. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a)(1) - Greater than or equal to 10% total organic carbon.
D002:
D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SWDA systems.

F039/UNDERLYING HAZARDOUS CONSTITUENT FORM(UTS)

Generator Name: CLARK OIL & REFINING CORP
Profile Number: BU5588 - TWI

Manifest Doc. No.: 97301
State Manifest No.: IL 7222181

F001, D002, or D012-D043 requires treatment to 268.48 standards, then each underlying hazardous constituent present in the waste at the point of generation, and at a level above the UTS constituent specific treatment standard, must be listed. Write the letter (A, B1, B3, or C which corresponds to the letter on form CWM-2001A) beside each constituent present, to properly describe how the constituent(s) must be managed under 40 CFR 268.7.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/Kg)	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/Kg)
Acenaphthylene		0.059	3.4	p-Chloroaniline		0.46	16
Acenaphthene		0.059	3.4	Chlorobenzene		0.057	6.0
Acetone		0.28	160	Chlorobenzilate		0.10	NA
Acetonitrile		5.6	1.8[2]	2-chloro-1,3-butadiene		0.057	0.28[2]
Acetophenone		0.010	9.7	Chlorodibromomethane		0.057	15
2-Acetylaminofluorene		0.059	140	Chloroethane		0.27	6.0
Acrolein		0.29	NA	bis-(2-Chloroethoxy) methane		0.036	7.2
Acrylamide		19[2]	23[2]	bis-(2-Chloroethyl) ether		0.033	6.0
Acrylonitrile		0.24	84	Chloroform		0.046	6.0
Aldrin		0.021	0.066	bis-(2-Chloroisopropyl) ether		0.055	7.2
4-Aminobiphenyl		0.13	NA	p-Chloro-m-cresol		0.018	14
Aniline		0.81	14	2-Chloroethyl Vinyl ether		0.062[2]	NA[2]
Anthracene		0.059	3.4	Chloromethane (methyl chloride)		0.19	30
Aramite		0.36	NA	2-Chloronaphthalene		0.055	5.6
alpha-BHC		0.00014	0.066	2-Chlorophenol		0.044	5.7
beta-BHC		0.00014	0.066	3-Chloropropylene		0.036	30
delta-BHC		0.023	0.066	Chrysene		0.059	3.4
gamma-BHC (Lindane)		0.0017	0.066	o-Cresol		0.11	5.6
Benzene	A	0.14	10	Cresol (m- and p- isomers)		0.77	5.6
Benzo (a) anthracene		0.059	3.4	Cyclohexanone		0.36	0.75[1,2]
Benzal chloride		0.055[2]	6.0[2]	1,2-Dibromo-3-Chloropropane		0.11	15
Benzo (b) fluoranthene[4]		0.11	6.8	1,2-Dibromoethane (Ethylene dibromide)		0.028	15
Benzo (k) fluoranthene[4]		0.11	6.8	Dibromomethane		0.11	15
Benzo (g,h,i) perylene		0.0055	1.8	2,4-Dichlorophenoxyacetic acid (2,4-D)		0.72	10
Benzo (a) pyrene		0.061	3.4	o,p-DDD		0.023	0.087
Bromodichloromethane		0.35	15	p,p-DDD		0.023	0.087
Bromoform (Tribromomethane)		0.63	15	o,p-DDE		0.031	0.087
Bromomethane (methyl bromide)		0.11	15	p,p-DDE		0.031	0.087
4-Bromophenyl phenyl ether		0.055	15	o,p-DDT		0.0039	0.087
n-Butanol (n-butyl alcohol)		5.6	2.6	p,p-DDT		0.0039	0.087
Butyl benzyl phthalate		0.017	28	Dibenzo (a,h) anthracene		0.055	8.2
2-sec-Butyl-4,6-dinitrophenol (Dinoseb)		0.066	2.5	Dibenzo (a,e) pyrene		0.061	NA
Carbon disulfide		3.8	4.8[1,2]	m-Dichlorobenzene		0.036	6.0
Carbon tetrachloride		0.057	6.0	o-Dichlorobenzene		0.088	6.0
Chlordane (alpha & gamma)		0.0033	0.26	p-Dichlorobenzene		0.090	6.0

If you have any questions, please call 1-800-843-3604 for Customer Service.
Chemical Waste Management, Inc.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/Kg)	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/Kg)
Dichlorodifluoromethane		0.23	7.2	Fluoranthene		0.068	3.4
1,1-Dichloroethane		0.059	6.0	Fluorene		0.059	3.4
1,2-Dichloroethane		0.21	6.0	Heptachlor		0.0012	0.066
1,1-Dichloroethylene		0.025	6.0	Heptachlor epoxide		0.016	0.066
trans-1,2-Dichloroethylene		0.054	30	Hexachlorobenzene		0.055	10
2,4-Dichlorophenol		0.044	14	Hexachlorobutadiene		0.055	5.6
2,6-Dichlorophenol		0.044	14	Hexachlorocyclopentadiene		0.057	2.4
1,2-Dichloropropane		0.85	18	Hexachlorodibenzo-furans		0.000063	0.001
cis-1,3-Dichloropropene		0.036	18	Hexachlorodibenzo-p-dioxins		0.000063	0.001
trans-1,3-Dichloropropene		0.036	18	Hexachloroethane		0.055	30
Dieldrin		0.017	0.13	Hexachloropropylene		0.035	30
Diethyl phthalate		0.20	28	Indeno (1,2,3-c,d) pyrene		0.0055	3.4
p-Dimethylaminoazobenzene		0.13[2]	NA	Iodomethane		0.19	65
2,4-Dimethyl phenol		0.036	14	Isobutanol (Isobutyl Alcohol)		5.6	170
Dimethyl phthalate		0.047	28	Isodrin		0.021	0.066
Di-n-butyl phthalate		0.057	28	Isosafrole		0.081	2.6
1,4-Dinitrobenzene		0.32	2.3	Kepone		0.0011	0.13
4,6-Dinitro-o-cresol		0.28	160	Methylacrylonitrile		0.24	84
2,4-Dinitrophenol		0.12	160	Methanol		5.6	0.75[1,2]
2,4-Dinitrotoluene		0.32	140	Methapyrilene		0.081	1.5
2,6-Dinitrotoluene		0.55	28	Methoxychlor		0.25	0.18
Di-n-octyl phthalate		0.017	28	3-Methylcholanthrene		0.0055	15
Di-n-propylnitrosoamine		0.40	14	4,4-Methylene-bis-(2-chloroaniline)		0.50	30
1,4-Dioxane		NA	170	Methylene chloride		0.089	30
Diphenyl amine[4]		0.92	13[3]	Methyl ethyl ketone		0.28	36
Diphenylnitrosoamine[4]		0.92	13[3]	Methyl isobutyl ketone		0.14	33
1,2-Diphenyl hydrazine		0.087	NA	Methyl methacrylate		0.14	160
Disulfoton		0.017	6.2	Methyl methanesulfonate		0.018	NA
Endosulfan I		0.023	0.066	Methyl parathion		0.014	4.6
Endosulfan II		0.029	0.13	Naphthalene	A	0.059	5.6
Endosulfan sulfate		0.029	0.13	2-Naphthylamine		0.52	NA
Endrin		0.0028	0.13	o-Nitroaniline		0.27[2]	14[2]
Endrin aldehyde		0.025	0.13	p-Nitroaniline		0.028	28
Ethyl acetate		0.34	33	Nitrobenzene		0.068	14
Ethyl benzene	A	0.057	10	5-Nitro-o-toluidine		0.32	28
Ethyl cyanide (Propanenitrile)		0.24	360	o-Nitrophenol		0.028[2]	13[2]
Ethyl ether		0.12	160	p-Nitrophenol		0.12	29
bis-(2-Ethylhexyl) phthalate		0.28	28	N-Nitrosodiethylamine		0.40	28
Ethyl methacrylate		0.14	160	N-Nitrosodimethylamine		0.40	2.3[2]
Ethylene oxide		0.12	NA	N-Nitroso-di-n-butylamine		0.40	17
Fluor		0.017	15	N-Nitrosomethylethylamine		0.40	2.3

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/Kg)	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/Kg)
N ..rosomorpholine		0.40	2.3	Toxaphene		0.0095	2.6
N-Nitrosopiperidine		0.013	35	1,2,4-Trichlorobenzene		0.055	19
N-Nitrosopyrro...ine		[illegible]	[illegible]	1,1,1-Trichloroethane		0.054	6.0
Parathion		0.014	4.6	1,1,2-Trichloroethane		0.054	6.0
PCBs (Total) all isomers or Aroclors		0.10	10	Trichloroethylene		0.054	6.0
Pentachlorobenzene		0.055	10	Trichloromonofluoromethane		0.020	30
Pentachloroethane		0.055[2]	6.0[2]	2,4,5-Trichlorophenol		0.18	7.4
Pentachlorodibenzo-furans		0.000035	0.001	2,4,6-Trichlorophenol		0.035	7.4
Pentachlorodibenzo-p-dioxins		0.000063	0.001	1,2,3-Trichloropropane		0.85	30
Pentachloronitrobenzene		0.055	4.8	1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30
Pentachlorophenol		0.089	7.4	Tris(2,3-dibromopropyl) phosphate		0.11	0.10[2]
Phenacetin		0.081	16	Vinyl chloride		0.27	6.0
Phenathrene		0.059	5.6	Xylenes (sum of o-, m-, and p- isomers)	A	0.32	30
Phenol		0.039	6.2	Cyanides (Total)		1.2	590
Phorate		0.021	4.6	Cyanides (Amenable)		0.86	30[2]
Phthalic acid		0.055[2]	28[2]	Antimony		1.9	2.1[1]
Phthalic anhydride		0.055	28[2]	Arsenic		1.4	5.0[1]
Pronamide		0.093	1.5	Barium		1.2	7.6[1]
Pyrene		0.067	8.2	Beryllium		0.82	0.014[1,2]
Pyridine		0.014	16	Cadmium		0.69	0.19[1]
Safrole		0.081	22	Chromium (Total)		2.77	0.86[1]
Silvex (2,4,5-TP)		0.72	7.9	Fluoride		35	NA
2,4,5-T		0.72	7.9	Lead	A	0.69	0.37[1]
1,2,4,5-Tetrachlorobenzene		0.055	14	Mercury (Not from retorting)		0.15	0.025[1]
Tetrachlorodibenzo-furans		0.000063	0.001	Nickel		3.98	5.0[1]
Tetrachlorodibenzo-p-dioxins		0.000063	0.001	Selenium		0.82	0.16[1]
1,1,1,2-Tetrachloroethane		0.057	6.0	Silver		0.43	0.30[1]
1,1,2,2-Tetrachloroethane		0.057	6.0	Sulfide		14	NA
Tetrachloroethylene		0.056	6.0	Thallium		1.4	0.078[1,2]
2,3,4,6-Tetrachlorophenol		0.030	7.4	Zinc		2.61	NA
Toluene	A	0.080	10				

1 These concentrations are expressed in mg/l and are measured through an analysis of TCLP extract; all others measured through a total waste analysis.
2 These constituents are only applicable as Underlying Hazardous Constituents. They are not constituents requiring treatment in F039 wastes.
3 Vanadium is not an Underlying Hazardous Constituent requiring treatment in D001, D002, or D012-D043 wastes.
4 These compounds are regulated by the sum of their concentration instead of as individual constituents.

A signature is required, only if the original waste has been treated to remove any hazardous characteristic(s).

"I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification. including the possibility of fine and imprisonment."

Signature: [signature] Title: Asst. Env. Mgr. Date: 3-21-97

CWM-2004(01/95)

0997-10865

ENVIRONMENTAL MONITORING AND TECHNOLOGIES, INC.

8100 North Austin Avenue
Morton Grove, Illinois 60053-3203
847-967-6666
FAX: 847-967-6735

LABORATORY REPORT

159722

Clark Refining & Marketing, Inc.
131st & Kedzie Avenue
Blue Island, IL 60406

Report Date: 03/14/97
Sample Received: 03/07/97

Sample Description: Soil Grab - TANK 78
Sample No.: 05077

Analyte	Result	Date Completed	By	Method
Ash content	56.7%	03/11/97	SS	2540E(2)
Water Compatibility	NO REACTION SINKS			
		03/12/97	DM	D5058-90(21)
Cyanide Screen	<5.0	03/11/97	AG	D5049-90(21)
Open Cup Flash Point	>180.°F	03/12/97	DM	D92-90(21)
Odor of sample	NONE	03/12/97	DM	D4979-89(21)
Paint Filter	PASS	03/12/97	DM	9095(6)
Total Phenolics	33.3	03/12/97	TS	9065(6)
Physical Appearance	BLACK SOIL	03/12/97	DM	D4979-89(21)
Radiation Screen	at background			
		03/08/97	DM	M3 survey meter( )
Total Solids	72.3%	03/11/97	SS	2540B(2)
Reactive Sulfide	<10.0	03/10/97	RG	7.3.4(6)
pH (10% Solution)	6.42	03/12/97	DM	9045(6)
Analysis Performed on TCLP Extract				
Arsenic	<0.200	03/11/97	GF	6010A(6)
Barium	<0.50	03/11/97	GF	6010A(6)
Cadmium	<0.02	03/11/97	GF	6010A(6)
Chromium	<0.10	03/11/97	GF	6010A(6)
Copper	<0.10	03/11/97	GF	6010A(6)
Lead	0.21	03/11/97	GF	6010A(6)
Mercury	<0.0100	03/11/97	ML	7470A(6)
Nickel	<0.10	03/11/97	GF	6010A(6)
Selenium	<0.200	03/11/97	GF	6010A(6)
Silver	<0.20	03/11/97	GF	6010A(6)
Zinc	<0.50	03/11/97	GF	6010A(6)

All results expressed as ppm unless otherwise indicated
(2) Analysis performed using "Standard Methods for the Examination of Wastewater",19th Edition
(21) Analysis performed using ASTM Method
(6) Methods performed according to SW-846 "Test Methods for Evaluating Solid Waste"

0997-10866

LABORATORY DIRECTOR

ENVIRONMENTAL MONITORING AND TECHNOLOGIES, INC.

8100 North Austin Avenue
Morton Grove, Illinois 60053-3203
847-967-6666
FAX: 847-967-6735

LABORATORY REPORT

159722-A

Clark Refining & Marketing, Inc.
131st & Kedzie Avenue
Blue Island, IL 60406

Report Date: 3/17/97
Sample Received: 3/7/97

Sample Description: Soil Grab - TANK 78
Sample No.: 05077

Compounds	Concentration Found In Sample	Concentration Found In Blank	Method Detection Limit (MDL)	Regulatory Limit
1. Benzene	<0.25	<0.01	0.01	0.50
2. Carbon Tetrachloride	<0.25	<0.01	0.01	0.50
3. Chlorobenzene	<50.0	<0.01	0.01	100.00
4. Chloroform	<3.0	<0.01	0.01	6.00
5. o-Cresol	<100.0	<0.01	0.01	200.00
6. m-Cresol	<100.0	<0.01	0.01	200.00
7. p-Cresol	<100.0	<0.01	0.01	200.00
Total Cresol	<100.0	<0.01	0.01	200.00
8. 1,4-Dichlorobenzene	<3.75	<0.01	0.01	7.50
9. 1,2-Dichloroethane	<0.25	<0.01	0.01	0.50
10. 1,1-Dichloroethene	<0.35	<0.01	0.01	0.700
11. 2,4-Dinitrotoluene	<0.07	<0.01	0.01	0.13
12. Hexachlorobenzene	<0.07	<0.01	0.01	0.13
13. Hexachloro-1,3 -butadiene	<0.25	<0.01	0.01	0.50
14. Hexachloroethane	<1.50	<0.01	0.01	3.00
15. Methyl Ethyl Ketone	<100.0	<0.01	0.01	200.00
16. Nitrobenzene	<1.00	<0.01	0.01	2.00
17. Pentachlorophenol	<50.00	<0.01	0.01	100.00
18. Pyridine	<2.50	<0.01	0.01	5.00
19. Tetrachloroethylene	<0.35	<0.01	0.01	0.70
20. Trichloroethylene	<0.25	<0.01	0.01	0.50
21. 2,4,5-Trichlorophenol	<200.00	<0.01	0.01	400.00
22. 2,4,6-Trichlorophenol	<1.00	<0.01	0.01	2.00
23. Vinyl Chloride	<0.10	<0.01	0.01	0.20

All results expressed as ppm unless otherwise indicated.
Methods performed according to SW-846, "Test methods for Evaluating Solid Waste".

Analysis performed on Extract from TCLP.

The contents of this report apply only to the sample analyzed. No duplication of this report is allowed except in its entirety.

0997-10867

LABORATORY DIRECTOR

ENVIRONMENTAL MONITORING AND TECHNOLOGIES, INC.

8100 North Austin Avenue
Morton Grove, Illinois 60053-3203
847-967-6666
FAX: 847-967-6735

LABORATORY REPORT

159722-B

Clark Refining & Marketing, Inc.
131st & Kedzie Avenue
Blue Island, IL 60406

Report Date: 3/17/97
Sample Received: 3/7/97

Sample Description: Soil Grab - TANK 78
Sample No.: 05077

	Concentration Found In Sample (ppb)	Concentration Found In Blank (ppb)	Method Detection Limit (MDL) ug/kg (ppb)	Quantitation Limit ug/kg (ppb)
PCB 1221	<400	<0.08	400	2000
PCB 1232	<400	<0.08	400	2000
PCB 1016 (1242)	<400	<0.08	400	2000
PCB 1248	<400	<0.08	400	2000
PCB 1254	<400	<0.08	400	4000
PCB 1260	<400	<0.08	400	4000
(Total PCB)	<400	<0.08	400	---

All results expressed as ppb unless otherwise indicated.

Methods performed according to SW-846, "Test Methods for Evaluating Solid Waste".

The contents of this report apply only to the sample analyzed. No duplication of this report is allowed except in its entirety.

0997-10868

Leah E. Zehner

LABORATORY DIRECTOR

RCRA ATTACHMENT 10

0997-10869

From: Elva Carusiello
Date: 8/24/95 8:51 AM
Priority: Normal
CC Mail List:#BI-ALL-USERS
Subject: Drum Disposal

---------- Forwarded w/Changes ----------

From: David Beener 8/23/95 11:58 AM
TO: Elva Carusiello
Subject: drum Disposal

---------- Message Contents ----------

To all Blue Island Employees:

Empty Drum Disposal Procedure:

Empty drums must be drained completely. They can be disposed of in a designated special waste roll-off for empty containers.

Prior to disposal the lids need to be removed and the drums crushed. Since our crusher is not yet operational, just place the empty drums in the designated roll-off and Waste Management will crush the drums prior to disposal.

The current roll-off that can be used for empty drums is # 200124 located at 5 acres (adjacent to 80's tank farm). Reminder: a vehicle entry (LEL check) is required prior to entry to 5 Acres with a vehicle.

Please call if you have any questions. Thanks.

Sandblast Sample Analytical Results

Summary

Sandblast materials are typically generated from the sandblasting area outside the Weld Shop, or from specific sandblasting activities at a particular unit. Three sandblast samples have been collected at the Clark Blue Island facility. The samples include a grab sample collected from behind the weld shop, a waste sample collected during the FCC sandblasting operation, and a waste profile sample collected from an unidentified source of sandblast material. The FCC sandblast waste was analyzed for RCRA characteristics and the Toxic Characteristic Leaching Procedure (TCLP) contaminants, the weld shop grab sample was analyzed for the TCLP contaminants, and the waste profile sample collected from an unidentified location was analyzed for RCRA characteristics, TCLP for copper, nickel and zinc, and polychlorinated biphenyls (PCBs).

The sandblast samples analyzed for RCRA characteristics were within acceptable limits for all components of the RCRA characteristics analyses.The weld shop sandblast sample and the FCC sandblast sample revealed detectable concentrations of TCLP barium, while the waste profile sample revealed a detectable concentration of TCLP zinc. PCBs were not detected in the waste profile sample.

Characterization Guidelines

Previous sampling documentation does not provide adequate characterization of hazardous constituents for sandblast generated at the Clark Blue Island facility. The weld shop is the most significant generator of sandblast grit, with maintenance activities at individual units responsible for generation of the remaining sandblast grit. The wastestream generating the waste should be identified in the sample description in order to identify the wastestream generating the sandblast grit.

Sandblast sample analyses should be selected in accordance with the purpose of the sampling event. For example, if sandblast grit was generated as a result of cleaning parts containing lead-based paint, lead should be the target parameter of concern. If sandblast grit is generated from normal activities at the weld shop, process knowledge can be used based on previous experience and analytical results to properly characterize the waste for disposal. Typically, if a sample of sandblast grit must be collected and analyzed, the target analysis should be TCLP metals.

ANALYTICAL FOR FUTURE SAMPLES

0997-10871

~~TARGET ANALYSIS~~ SUMMARY TABLE FOR ALL WASTES

PROCESS	TARGET ANALYSIS	FREQUENCY
SAND BLAST CABINETS/BOOTH	1. GENERATOR KNOWLEDGE 2. TCLP METALS	1/YEAR
SANDBLAST TANK OR "TANK LESS" EQUIPMENT	1. TCLP METALS 2. OTHER KNOWN HAZARDOUS CONSTITUENTS, IE. LEAD	PER OCCURANCE

Sandblast Sample Analytical Results

	Sandblast Grab behind Weld Shop	Sandblast Waste FCC Job	Sand Blast Waste Management Profile
Laboratory ID Number	93999	99873	111630
Sample ID Number	77889	89494	1756
Laboratory Report Date	04/11/94	08/02/94	12/01/94
Component			
Total Cyanide	NA	ND	NA
Open Cup Flash Point	NA	>180 F	NA
Reactive Sulfide	NA	ND	NA
pH	NA	10.1	NA
Ash Content	NA	NA	94.1%
Extractable Organic Halogens	NA	NA	ND
Odor of Sample	NA	NA	None
Paint Filter	NA	NA	Pass
Physical Appearance	NA	NA	Dark Brown Solid
Total Phenolics	NA	NA	ND
Total Solids	NA	NA	94.5%
Water Compatibility	NA	NA	No Reaction
TCLP Arsenic	ND	ND	NA
TCLP Barium	0.65	0.51	NA
TCLP Cadmium	ND	ND	NA
TCLP Copper	NA	NA	ND
TCLP Chromium	ND	ND	NA
TCLP Lead	ND	ND	NA
TCLP Mercury	ND	ND	NA
TCLP Nickel	NA	NA	ND
TCLP Selenium	ND	ND	NA
TCLP Silver	ND	ND	NA
TCLP Zinc	NA	NA	0.55
TCLP Benzene	ND	ND	NA
TCLP Carbon Tetrachloride	ND	ND	NA
TCLP Chlorobenzene	ND	ND	NA
TCLP Chloroform	ND	ND	NA

Sandblast Sample Analytical Results

	Sandblast Grab behind Weld Shop	Sandblast Waste FCC Job	Sand Blast Waste Management Profile
Laboratory ID Number	93999	99873	111630
Sample ID Number	77889	89494	1756
Laboratory Report Date	04/11/94	08/02/94	12/01/94
Component			
TCLP o-Cresol	ND	ND	NA
TCLP m-Cresol	ND	ND	NA
TCLP p-Cresol	ND	ND	NA
TCLP Total Cresol	ND	ND	NA
TCLP 1,4-Dichlorobenzene	ND	ND	NA
TCLP 1,2-Dichloroethane	ND	ND	NA
TCLP 1,1-Dichloroethene	ND	ND	NA
TCLP 2,4-Dinitrotoluene	ND	ND	NA
TCLP Hexachlorobenzene	ND	ND	NA
TCLP Hexachloro-1,3-butadiene	ND	ND	NA
TCLP Hexachloroethane	ND	ND	NA
TCLP Methyl Ethyl Ketone	ND	ND	NA
TCLP Nitrobenzene	ND	ND	NA
TCLP Pentachlorophenol	ND	ND	NA
TCLP Pyridine	ND	ND	NA
TCLP Tetrachloroethylene	ND	ND	NA
TCLP Trichloroethylene	ND	ND	NA
TCLP 2,4,5-Trichlorophenol	ND	ND	NA
TCLP 2,4,6-Trichlorophenol	ND	ND	NA
TCLP Vinyl Chloride	ND	ND	NA
Total PCB 1221	NA	NA	ND
Total PCB 1232	NA	NA	ND
Total PCB 1016 (1242)	NA	NA	ND
Total PCB 1248	NA	NA	ND
Total PCB 1254	NA	NA	ND
Total PCB 1260	NA	NA	ND

Sludge Sample Analytical Results

Summary

Sludge is generated from a variety of processes and activities at the Blue Island Refinery. In many cases, these sludges have been composed of materials which are classified as listed hazardous wastes; therefore, process knowledge was used to designate offsite disposal. There have been some isolated instances where materials classified as sludge have been sampled and analyzed. The samples include a grab sample collected from Tank 15, a grab sample collected from an asphalt drum, and two grab samples collected from unidentified barrels. The two unidentified drum samples were collected for the paint filter analyses, and the sample collected from the asphalt drum was analyzed for polychlorinated biphenyls (PCBs) and for the volatile constituents of the RCRA F001 through F005 listed wastes. The sludge sample collected from Tank 15 was analyzed for RCRA characteristics and the Toxic Characteristic Leaching Procedure (TCLP) contaminants.

The RCRA characteristics analyses revealed a sludge barrel sample that failed the paint filter analysis and the Tank 15 sludge sample that had a reactive sulfide concentration of 28.4 parts per million (ppm). The sludge sample from Tank 15 also revealed a TCLP barium concentration of 0.7 ppm and a TCLP total cresol concentration of 183 ppm. The Tank 15 sludge sample contained no detectable volatile constituents of the RCRA F001 through F005 listed waste, and PCBs were not detected in the asphalt drum sample.

Characterization Guidelines

Generally, sludges generated at the Blue Island Refinery should be characterized based on their origin. Sludges generated from process wastestreams, the API separator, or the bundle cleaning area are typically listed hazardous wastes, and can be characterized using process knowledge. When a sludge is sampled, it should be analyzed for the hazardous constituents associated with the wastestream that generated the sludge. Additionally, sludge sample analyses should be selected in accordance with the purpose of the sampling event. If sludge samples are collected as part of an investigation, samples should only be analyzed for total concentrations of the hazardous constituents associated with the generating wastestream. If sludge samples are collected to characterize the waste for disposal, samples should be analyzed for the TCLP contaminants, as well as any additional analyses as required by the facility accepting the waste. Typical target parameters should include benzene, and TCLP metals.

Sludge Sample Analytical Results

	Sludge Grab Tank 15	Sludge Grab Asphalt Drum	Sludge Grab Barrel	Sludge Grab Barrel
Laboratory ID Number	97841	104418	104604	104605
Sample ID Number	83678	92766	93434	92766
Laboratory Report Date	11/19/92	03/21/94	05/03/94	04/14/95
Component				
Open Cup Flash Point	>180 F	NA	NA	NA
Paint Filter	NA	NA	Pass	Fail
Reactive Cyanide	ND	NA	NA	NA
Reactive Sulfide	28.4	NA	NA	NA
pH	10.5	NA	NA	NA
TCLP Arsenic	ND	NA	NA	NA
TCLP Barium	0.7	NA	NA	NA
TCLP Cadmium	ND	NA	NA	NA
TCLP Chromium	ND	NA	NA	NA
TCLP Lead	ND	NA	NA	NA
TCLP Mercury	ND	NA	NA	NA
TCLP Selenium	ND	NA	NA	NA
TCLP Silver	ND	NA	NA	NA
TCLP Benzene	ND	NA	NA	NA
TCLP Carbon Tetrachloride	ND	NA	NA	NA
TCLP Chlorobenzene	ND	NA	NA	NA
TCLP Chloroform	ND	NA	NA	NA
TCLP o-Cresol	53.6	NA	NA	NA
TCLP m,p-Cresol	129	NA	NA	NA
TCLP Total Cresol	183	NA	NA	NA
TCLP 1,4-Dichlorobenzene	ND	NA	NA	NA
TCLP 1,2-Dichloroethane	ND	NA	NA	NA
TCLP 1,1-Dichloroethene	ND	NA	NA	NA
TCLP 2,4-Dinitrotoluene	ND	NA	NA	NA
TCLP Hexachlorobenzene	ND	NA	NA	NA
TCLP Hexachloro-1,3-butadiene	ND	NA	NA	NA

Sludge Sample Analytical Results

	Sludge Grab Tank 15	Sludge Grab Asphalt Drum	Sludge Grab Barrel	Sludge Grab Barrel
Laboratory ID Number	97841	104418	104604	104605
Sample ID Number	83678	92766	93434	92766
Laboratory Report Date	11/19/92	03/21/94	05/03/94	04/14/95
Component				
TCLP Hexachloroethane	ND	NA	NA	NA
TCLP Methyl Ethyl Ketone	ND	NA	NA	NA
TCLP Nitrobenzene	ND	NA	NA	NA
TCLP Pentachlorophenol	ND	NA	NA	NA
TCLP Pyridine	ND	NA	NA	NA
TCLP Tetrachloroethylene	ND	NA	NA	NA
TCLP Trichloroethylene	ND	NA	NA	NA
TCLP 2,4,5-Trichlorophenol	ND	NA	NA	NA
TCLP 2,4,6-Trichlorophenol	ND	NA	NA	NA
TCLP Vinyl Chloride	ND	NA	NA	NA
Total PCB 1221	NA	ND	NA	NA
Total PCB 1232	NA	ND	NA	NA
Total PCB 1016 (1242)	NA	ND	NA	NA
Total PCB 1248	NA	ND	NA	NA
Total PCB 1254	NA	ND	NA	NA
Total PCB 1260	NA	ND	NA	NA
F001				
Total Tetrachloroethylene	NA	ND	NA	NA
Total Trichloroethylene	NA	ND	NA	NA
Total Methylene Chloride	NA	ND	NA	NA
Total 1,1,1-Trichloroethane	NA	ND	NA	NA
Total Carbon Tetrachloride	NA	ND	NA	NA
F002				
Total Tetrachloroethylene	NA	ND	NA	NA
Total Methylene Chloride	NA	ND	NA	NA

0997-10876

Sludge Sample Analytical Results

	Sludge Grab Tank 15	Sludge Grab Asphalt Drum	Sludge Grab Barrel	Sludge Grab Barrel
Laboratory ID Number	97841	104418	104604	104605
Sample ID Number	83678	92766	93434	92766
Laboratory Report Date	11/19/92	03/21/94	05/03/94	04/14/95
Component				
Total Trichloroethylene	NA	ND	NA	NA
Total 1,1,1-Trichloroethane	NA	ND	NA	NA
Total Chlorobenzene	NA	ND	NA	NA
Total 1,1,2-Trichloro-1,2,2-Trifluoroethane	NA	ND	NA	NA
Total Ortho-Dichlorobenzene	NA	ND	NA	NA
Total Trichlorofluoromethane	NA	ND	NA	NA
Total 1,1,2-Trichloroethane	NA	ND	NA	NA
F003				
Total Xylenes	NA	0.5	NA	NA
Total Acetone	NA	ND	NA	NA
Total Ethyl Acetate	NA	ND	NA	NA
Total Ethyl Benzene	NA	ND	NA	NA
Total Ether	NA	ND	NA	NA
Total Methyl Isobutyl Ketone	NA	ND	NA	NA
Total n-Butyl Alcohol	NA	ND	NA	NA
Total Cyclohexanone	NA	ND	NA	NA
Total Methanol	NA	ND	NA	NA
F004				
Total Cresols or Cresylic Acid	NA	ND	NA	NA
Total Nitrobenzene	NA	ND	NA	NA
F005				
Total Toluene	NA	ND	NA	NA
Total Methyl Ethyl Ketone	NA	ND	NA	NA
Total Carbon Disulfides	NA	ND	NA	NA
Total Isobutanaol	NA	ND	NA	NA

0997-10877

Sludge Sample Analytical Results

	Sludge Grab Tank 15	Sludge Grab Asphalt Drum	Sludge Grab Barrel	Sludge Grab Barrel
Laboratory ID Number	97841	104418	104604	104605
Sample ID Number	83678	92766	93434	92766
Laboratory Report Date	11/19/92	03/21/94	05/03/94	04/14/95
Component				
Total Pyridine	NA	ND	NA	NA
Total 2-Ethoxyethanol	NA	ND	NA	NA
Total Benzene	NA	ND	NA	NA
Total 2-Nitropropane	NA	ND	NA	NA

Miscellaneous Sample Analytical Results

Summary

Miscellaneous analytical results are sample results which were not readily grouped into other wastestreams or sampling locations. Miscellaneous sample analytical results collected at the Blue Island refinery include samples of spent 59-3 chloride, ISOMAX Stage II, 30C filters, waste boom material, and stormwater samples. The spent 59-3 chloride grab sample was analyzed for Resource Conservation and Recovery Act (RCRA) characteristics, total inorganics, and Toxic Characteristic Leaching Procedure (TCLP) contaminants. The ISOMAX Stage II sample and the 30C Filters sample was analyzed for RCRA characteristics and TCLP contaminants, while the waste boom material sample was analyzed for RCRA characteristics, TCLP contaminants, polychlorinated biphenyls (PCBs), and the volatile constituents of the RCRA F001 through F005 listed wastes. A stormwater sample from Dike 56 was analyzed for total purgeable organics.

The spent 59-3 chloride sample exhibited a closed cup flash point of 94° F, with all other RCRA characteristics within acceptable limits. The chloride sample also revealed detectable concentrations of total cadmium, chromium, lead, mercury, selenium, and TCLP barium. The ISOMAX Stage II sample revealed a reactive sulfide concentration of 28.2 pats per million (ppm) and a TCLP benzene concentration of 3.68 ppm. TCLP cadmium and TCLP chromium were detected in the 30C filters sample at concentrations of 0.04 and 0.11 ppm, respectively. The TCLP analyses on the waste boom material sample revealed barium at 0.34 ppm and lead at 0.14 ppm, the F003 listed waste analysis indicated xylenes at 138 ppm and ethylbenzene at 11.4 ppm, and the F005 listed waste analysis contained toluene at 13.3 ppm. The stormwater sample from dike 56 contained benzene at a concentration of 34.8 ppm.

Characterization Guidelines

Analyses selected for miscellaneous samples should be dependant on the wastes being sampled and the purpose of the sampling. Samples collected during investigations should be analyzed for total constituents, such as inorganics, purgeable organics, base/neutral extractables, acid extractables, and polychlorinated biphenyls. Waste characterization samples should be analyzed for RCRA characteristics and TCLP contaminants.

Miscellaneous Soil Sample Analytical Results

	Chloride Grab Spent 59-3	ISOMAX Stage II	Filters 30C	Waste Grab Boom Material	Stormwater Grab Dike 56
Laboratory ID Number	54380	92655	95637	104319	120704
Sample ID Number	34678	75798	80185	92289	15458
Laboratory Report Date	11/19/92	03/21/94	05/03/94	08/31/94	04/14/95
Component					
Open Cup Flash Point	NA	>180 F	>180 F	176 F	NA
Reactive Cyanide	NA	ND	ND	ND	NA
Reactive Sulfide	ND	28.2	ND	ND	NA
pH	9.7	6.96	8.6	6.16	NA
Closed Cup Flash Point	94 F	NA	NA	NA	NA
Total Cyanide	ND	NA	NA	ND	NA
Extractable Organic Halogens	ND	NA	NA	NA	NA
Paint Filter	Pass	NA	NA	Pass	NA
Total Phenolics	ND	NA	NA	ND	NA
Total Solids	85.6%	NA	NA	NA	NA
Specific Gravity	1.83	NA	NA	NA	NA
Total Arsenic	ND	NA	NA	NA	NA
Total Barium	ND	NA	NA	NA	NA
Total Cadmium	30	NA	NA	NA	NA
Total Chromium	54	NA	NA	NA	NA
Total Lead	300	NA	NA	NA	NA
Total Mercury	0.1	NA	NA	NA	NA
Total Selenium	0.2	NA	NA	NA	NA
Total Silver	ND	NA	NA	NA	NA
TCLP Arsenic	ND	ND	ND	ND	NA
TCLP Barium	0.18	ND	ND	0.34	NA
TCLP Cadmium	ND	ND	0.04	ND	NA
TCLP Chromium	ND	ND	0.11	ND	NA
TCLP Lead	ND	ND	ND	0.14	NA
TCLP Mercury	ND	ND	ND	ND	NA
TCLP Selenium	ND	ND	ND	ND	NA
TCLP Silver	ND	ND	ND	ND	NA

Miscellaneous Soil Sample Analytical Results

	Chloride Grab Spent 59-3	ISOMAX Stage II	Filters 30C	Waste Grab Boom Material	Stormwater Grab Dike 56
Laboratory ID Number	54380	92655	95637	104319	120704
Sample ID Number	34678	75798	80185	92289	15458
Laboratory Report Date	11/19/92	03/21/94	05/03/94	08/31/94	04/14/93
Component					
Total Chloromethane	NA	NA	NA	NA	ND
Total Bromomethane	NA	NA	NA	NA	ND
Total Vinyl Chloride	NA	NA	NA	NA	ND
Total Chloroethane	NA	NA	NA	NA	ND
Total Dichloroethane	NA	NA	NA	NA	ND
Total Acrolein	NA	NA	NA	NA	ND
Total Acrylonitrile	NA	NA	NA	NA	ND
Total Trichlorofluoromethane	NA	NA	NA	NA	ND
Total 1,1-Dichloroethene	NA	NA	NA	NA	ND
Total 1,1-Dichloroethane	NA	NA	NA	NA	ND
Total Trans-1,2-Dichloroethene	NA	NA	NA	NA	ND
Total Chloroform	NA	NA	NA	NA	ND
Total 1,2-Dichloroethane	NA	NA	NA	NA	ND
Total 1,1,1-Trichloroethane	NA	NA	NA	NA	ND
Total Carbon Tetrachloride	NA	NA	NA	NA	ND
Total Bromodichloromethane	NA	NA	NA	NA	ND
Total 1,2-Dichloropropane	NA	NA	NA	NA	ND
Total Cis-1,3-Dichloropropene	NA	NA	NA	NA	ND
Total Trichloroethene	NA	NA	NA	NA	ND
Total Benzene	NA	NA	NA	NA	34.8
Total Dibromochloromethane	NA	NA	NA	NA	ND
Total Trans-1,3-Dichloropropene	NA	NA	NA	NA	ND
Total 1,1,2-Trichloroethane	NA	NA	NA	NA	ND
Total 2-Chloroethyl vinyl ether	NA	NA	NA	NA	ND
Total Bromoform	NA	NA	NA	NA	NA
Total Tetrachloroethene	NA	NA	NA	NA	NA
Total 1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA
Total Toluene	NA	NA	NA	NA	NA
Total Chlorobenzene	NA	NA	NA	NA	NA

Miscellaneous Soil Sample Analytical Results

	Chloride Grab Spent 59-3	ISOMAX Stage II	Filters 30C	Waste Grab Boom Material	Stormwater Grab Dike 56
Laboratory ID Number	54380	92655	95637	104319	120704
Sample ID Number	34678	75798	80185	92289	15458
Laboratory Report Date	11/19/92	03/21/94	05/03/94	08/31/94	04/14/95
Component					
Total Ethylbenzene	NA	NA	NA	NA	NA
Total Xylenes	NA	NA	NA	NA	NA
Total Benzene	NA	NA	NA	NA	NA
Total Ethylbenzene	NA	NA	NA	NA	NA
Total Toluene	NA	NA	NA	NA	NA
Total Xylenes	NA	NA	NA	NA	NA
Total BTEX	NA	NA	NA	NA	NA
TCLP Benzene	ND	3.68	ND	ND	NA
TCLP Carbon Tetrachloride	ND	ND	ND	ND	NA
TCLP Chlorobenzene	ND	ND	ND	ND	NA
TCLP Chloroform	ND	ND	ND	ND	NA
TCLP o-Cresol	ND	ND	ND	ND	NA
TCLP m-Cresol	ND	ND	ND	ND	NA
TCLP p-Cresol	ND	ND	ND	ND	NA
TCLP Total Cresol	ND	ND	ND	ND	NA
TCLP 1,4-Dichlorobenzene	ND	ND	ND	ND	NA
TCLP 1,2-Dichloroethane	ND	ND	ND	ND	NA
TCLP 1,1-Dichloroethene	ND	ND	ND	ND	NA
TCLP 2,4-Dinitrotoluene	ND	ND	ND	ND	NA
TCLP Hexachlorobenzene	ND	ND	ND	ND	NA
TCLP Hexachloro-1,3-butadiene	ND	ND	ND	ND	NA
TCLP Hexachloroethane	ND	ND	ND	ND	NA
TCLP Methyl Ethyl Ketone	ND	ND	ND	ND	NA
TCLP Nitrobenzene	ND	ND	ND	ND	NA
TCLP Pentachlorophenol	ND	ND	ND	ND	NA
TCLP Pyridine	ND	ND	ND	ND	NA
TCLP Tetrachloroethylene	ND	ND	ND	ND	NA

Miscellaneous Soil Sample Analytical Results

	Chloride Grab Spent 59-3	ISOMAX Stage II	Filters 30C	Waste Grab Boom Material	Stormwater Grab Dike 56
Laboratory ID Number	54380	92655	95637	104319	120704
Sample ID Number	34678	75798	80185	92289	15458
Laboratory Report Date	11/19/92	03/21/94	05/03/94	08/31/94	04/14/95
Component					
TCLP Trichloroethylene	ND	ND	ND	ND	NA
TCLP 2,4,5-Trichlorophenol	ND	ND	ND	ND	NA
TCLP 2,4,6-Trichlorophenol	ND	ND	ND	ND	NA
TCLP Vinyl Chloride	ND	ND	ND	ND	NA
Total PCB 1221	NA	NA	NA	ND	NA
Total PCB 1232	NA	NA	NA	ND	NA
Total PCB 1016 (1242)	NA	NA	NA	ND	NA
Total PCB 1248	NA	NA	NA	ND	NA
Total PCB 1254	NA	NA	NA	ND	NA
Total PCB 1260	NA	NA	NA	ND	NA
Total PCB	NA	NA	NA	ND	NA
F001					
Total Tetrachloroethylene	NA	NA	NA	ND	NA
Total Trichloroethylene	NA	NA	NA	ND	NA
Total Methylene Chloride	NA	NA	NA	ND	NA
Total 1,1,1-Trichloroethane	NA	NA	NA	ND	NA
Total Carbon Tetrachloride	NA	NA	NA	ND	NA
F002					
Total Tetrachloroethylene	NA	NA	NA	ND	NA
Total Methylene Chloride	NA	NA	NA	ND	NA
Total Trichloroethylene	NA	NA	NA	ND	NA
Total 1,1,1-Trichloroethane	NA	NA	NA	ND	NA
Total Chlorobenzene	NA	NA	NA	ND	NA
Total 1,1,2-Trichloro-1,2,2-Trifluoroethane	NA	NA	NA	ND	NA
Total Ortho-Dichlorobenzene	NA	NA	NA	ND	NA
Total Trichlorofluoromethane	NA	NA	NA	ND	NA

Miscellaneous Soil Sample Analytical Results

	Chloride Grab Spent 59-3	ISOMAX Stage II	Filters 30C	Waste Grab Boom Material	Stormwater Grab Dike 56
Laboratory ID Number	54380	92655	95637	104319	120704
Sample ID Number	34678	75798	80185	92289	15458
Laboratory Report Date	11/19/92	03/21/94	05/03/94	08/31/94	04/14/95
Component					
Total 1,1,2-Trichloroethane	NA	NA	NA	ND	NA
F003					
Total Xylenes	NA	NA	NA	138	NA
Total Acetone	NA	NA	NA	ND	NA
Total Ethyl Acetate	NA	NA	NA	ND	NA
Total Ethyl Benzene	NA	NA	NA	11.4	NA
Total Ether	NA	NA	NA	ND	NA
Total Methyl Isobutyl Ketone	NA	NA	NA	ND	NA
Total n-Butyl Alcohol	NA	NA	NA	ND	NA
Total Cyclohexanone	NA	NA	NA	ND	NA
Total Methanol	NA	NA	NA	ND	NA
F004					
Total Cresols or Cresylic Acid	NA	NA	NA	ND	NA
Total Nitrobenzene	NA	NA	NA	ND	NA
F005					
Total Toluene	NA	NA	NA	13.3	NA
Total Methyl Ethyl Ketone	NA	NA	NA	ND	NA
Total Carbon Disulfides	NA	NA	NA	ND	NA
Total Isobutanaol	NA	NA	NA	ND	NA
Total Pyridine	NA	NA	NA	ND	NA
Total 2-Ethoxyethanol	NA	NA	NA	ND	NA
Total Benzene	NA	NA	NA	ND	NA
Total 2-Nitropropane	NA	NA	NA	ND	NA

CATALYST
~~Fire Training Field~~ Sample Analytical Results

Summary

Sampling of various catalysts has been
~~Sampling at the Fire Training Field has be~~ conducted, ~~to evaluate the impact of catalyst treatment or fire training activities~~. Samples have been analyzed for TCLP constituents and reactive cyanide. Samples analyzed for reactive cyanide revealed concentrations ranging from below detection limits to 58.3 parts per million (ppm). TCLP analyses have revealed detectable concentrations of arsenic, barium, cadmium, chromium, and lead in ~~the fire training field~~ catalyst samples, with chromium detected at significant levels in many of the samples. The TCLP analyses also revealed concentrations of benzene ranging from non-detect to 0.98 ppm.

Characterization Guidelines

Previous sampling documentation reveals that inorganics such as metals and reactive cyanide, as well as benzene, should be target parameters when analyzing catalyst samples ~~from the Fire Training Field~~. In addition, toluene, ethylbenzene, and xylenes ~~should also be considered since diesel fuel has generally been used to ignite fires for training exercises~~.

When sampling is focussed on catalyst treatment activities, reactive cyanide, pH, and TCLP metals should be evaluated. Historical results indicate that chromium should be of particular concern when analyzing these samples; however, existing documentation of the particular catalyst being treated should be evaluated to best identify target parameters of concern.

CATALYST

~~Fire Training Field~~ Sample Analytical Results

	~~Fire Training Field~~ CATALYST PILE ~~Soil~~, 1-A	~~Fire Training Field~~ ~~Soil~~, 2-B	~~Fire Training Field~~ ~~Soil~~, 3-C	~~Fire Training Field~~ ~~Soil~~, 4-D	~~Fire Training Field~~ ~~Soil~~, 5-E	~~Fire Training Field~~ ~~Soil~~, 6-F
Laboratory ID Number	92364	92365	92366	92367	92368	92369
Sample ID Number	75378	75379	75380	75381	75382	75383
Laboratory Report Date	03/17/94	03/17/94	03/17/94	03/17/94	03/17/94	03/17/94
Component						
Open Cup Flash Point	>180 F	>180 F	>180 F	>180 F	>180 F	>180 F
Reactive Cyanide	ND	ND	ND	ND	ND	ND
Reactive Sulfide	38.5	33.3	23.0	ND	58.3	13.3
pH	4.58	8.64	8.03	7.26	6.63	6.33
TCLP Arsenic	0.46	ND	ND	ND	ND	ND
TCLP Barium	ND	0.14	ND	ND	0.2	ND
TCLP Cadmium	0.09	ND	ND	ND	0.03	0.03
TCLP Chromium	2.30	ND	0.58	0.38	1.2	0.87
TCLP Lead	0.35	ND	ND	ND	ND	0.32
TCLP Mercury	ND	ND	ND	ND	ND	ND
TCLP Selenium	ND	ND	ND	ND	ND	ND
TCLP Silver	ND	ND	ND	ND	ND	ND
TCLP Benzene	NA	NA	NA	NA	NA	NA
TCLP Carbon Tetrachloride	NA	NA	NA	NA	NA	NA
TCLP Chlorobenzene	NA	NA	NA	NA	NA	NA
TCLP Chloroform	NA	NA	NA	NA	NA	NA
TCLP o-Cresol	NA	NA	NA	NA	NA	NA
TCLP m-Cresol	NA	NA	NA	NA	NA	NA
TCLP p-Cresol	NA	NA	NA	NA	NA	NA
TCLP Total Cresol	NA	NA	NA	NA	NA	NA
TCLP 1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA
TCLP 1,2-Dichloroethane	NA	NA	NA	NA	NA	NA
TCLP 1,1-Dichloroethene	NA	NA	NA	NA	NA	NA
TCLP 2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA
TCLP Hexachlorobenzene	NA	NA	NA	NA	NA	NA
TCLP Hexachloro-1,3-butadiene	NA	NA	NA	NA	NA	NA

~~Fire Training Field~~ Sample Analytical Results

	Fire Training Field Soil, 1-A	Fire Training Field Soil, 2-B	Fire Training Field Soil, 3-C	Fire Training Field Soil, 4-D	Fire Training Field Soil, 5-E	Fire Training Field Soil, 6-F
Laboratory ID Number	92364	92365	92366	92367	92368	92369
Sample ID Number	75378	75379	75380	75381	75382	75383
Laboratory Report Date	03/17/94	03/17/94	03/17/94	03/17/94	03/17/94	03/17/94
Component						
TCLP Hexachloroethane	NA	NA	NA	NA	NA	NA
TCLP Methyl Ethyl Ketone	NA	NA	NA	NA	NA	NA
TCLP Nitrobenzene	NA	NA	NA	NA	NA	NA
TCLP Pentachlorophenol	NA	NA	NA	NA	NA	NA
TCLP Pyridine	NA	NA	NA	NA	NA	NA
TCLP Tetrachloroethylene	NA	NA	NA	NA	NA	NA
TCLP Trichloroethylene	NA	NA	NA	NA	NA	NA
TCLP 2,4,5-Trichlorophenol	NA	NA	NA	NA	NA	NA
TCLP 2,4,6-Trichlorophenol	NA	NA	NA	NA	NA	NA
TCLP Vinyl Chloride	NA	NA	NA	NA	NA	NA

Fire Training Field Sample Analytical Results

	Fire Training Field Soil, 3-C	Fire Training Field Soil, 4-D	Fire Training Field Soil, 5-E	Fire Training Field Soil, 6-F	Fire Training Field Soil, 1-A	Fire Training Field Soil, 2-B
Laboratory ID Number	92651	92652	92653	92654	92802	92808
Sample ID Number	75380	75381	75382	75383	75378	75379
Laboratory Report Date	03/21/94	03/21/94	03/21/94	03/21/94	03/21/94	03/21/94
Component						
Open Cup Flash Point	NA	NA	NA	NA	NA	NA
Reactive Cyanide	NA	NA	NA	NA	NA	NA
Reactive Sulfide	NA	NA	NA	NA	NA	NA
pH	NA	NA	NA	NA	NA	NA
TCLP Arsenic	NA	NA	NA	NA	NA	NA
TCLP Barium	NA	NA	NA	NA	NA	NA
TCLP Cadmium	NA	NA	NA	NA	NA	NA
TCLP Chromium	NA	NA	NA	NA	NA	NA
TCLP Lead	NA	NA	NA	NA	NA	NA
TCLP Mercury	NA	NA	NA	NA	NA	NA
TCLP Selenium	NA	NA	NA	NA	NA	NA
TCLP Silver	NA	NA	NA	NA	NA	NA
TCLP Benzene	0.29	0.98	ND	ND	0.28	0.39
TCLP Carbon Tetrachloride	ND	ND	ND	ND	ND	ND
TCLP Chlorobenzene	ND	ND	ND	ND	ND	ND
TCLP Chloroform	ND	ND	ND	ND	ND	ND
TCLP o-Cresol	ND	ND	ND	ND	ND	ND
TCLP m-Cresol	ND	ND	ND	ND	ND	ND
TCLP p-Cresol	ND	ND	ND	ND	ND	ND
TCLP Total Cresol	ND	ND	ND	ND	ND	ND
TCLP 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND
TCLP 1,2-Dichloroethane	ND	ND	ND	ND	ND	ND
TCLP 1,1-Dichloroethene	ND	ND	ND	ND	ND	ND
TCLP 2,4-Dinitrotoluene	ND	ND	ND	ND	ND	ND
TCLP Hexachlorobenzene	ND	ND	ND	ND	ND	ND
TCLP Hexachloro-1,3-butadiene	ND	ND	ND	ND	ND	ND

~~Fire Training Field~~ Sample Analytical Results

	Fire Training Field Soil, 3-C	Fire Training Field Soil, 4-D	Fire Training Field Soil, 5-E	Fire Training Field Soil, 6-F	Fire Training Field Soil, 1-A	Fire Training Field Soil, 2-B
Laboratory ID Number	92651	92652	92653	92654	92802	92808
Sample ID Number	75380	75381	75382	75383	75378	75379
Laboratory Report Date	03/21/94	03/21/94	03/21/94	03/21/94	03/21/94	03/21/94
Component						
TCLP Hexachloroethane	ND	ND	ND	ND	ND	ND
TCLP Methyl Ethyl Ketone	ND	ND	ND	ND	ND	ND
TCLP Nitrobenzene	ND	ND	ND	ND	ND	ND
TCLP Pentachlorophenol	ND	ND	ND	ND	ND	ND
TCLP Pyridine	ND	ND	ND	ND	ND	ND
TCLP Tetrachloroethylene	ND	ND	ND	ND	ND	ND
TCLP Trichloroethylene	ND	ND	ND	ND	ND	ND
TCLP 2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	ND
TCLP 2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND
TCLP Vinyl Chloride	ND	ND	ND	ND	ND	ND

Five Acres Sample Analytical Results

Summary

Numerous samples have been collected at the 5 Acres site for a variety of reasons. Samples of surface soil, subsurface soil, waste soil, and groundwater samples, have been collected from the area. Samples have been analyzed for physical characteristics, TCLP constituents, and BTEX. Generally, sampling in this area has been the result of known, or suspected, releases. Analytical parameters have been selected based on known, or suspect, contaminants of concern.

Physical characteristics analyses have revealed reactive sulfide concentrations ranging from non-detect to 40.6 parts per million (ppm). The samples analyzed for BTEX detected benzene concentrations from non-detect to 1,140 ppm, ethylbenzene concentrations from non-detect to 40.8 ppm, toluene concentrations from non-detect to 102 ppm, and xylenes concentrations from non-detect to 106 ppm. The TCLP analyses showed barium concentrations ranging from non-detect to 2.3 ppm, lead concentrations ranging from non-detect to 0.25 ppm, and benzene concentrations ranging from non-detect to 55 ppm.

Characterization Guidelines

Previous sampling documentation has been used to characterize surface soils, subsurface soil, waste soils, and groundwater at the Five Acres site. Samples collected for further investigation in the Five Acres area should be analyzed for BTEX. Samples collected for waste characterization should generally be analyzed for TCLP organic constituents, especially benzene, and TCLP inorganics if they are suspected.

Five Acres Sample Analytical Results

	Grab 10A	Grab 11B	Groundwater 80s Tank Farm	Soil SW Property	Soil, SW Property Roll-Off Box	Soil North Pile	Soil Southwest Pile
Laboratory ID Number	95149	95150	105335	96596	105604	109551	109552
Sample ID Number	79346	79347	93506	82557	93507	99305	99306
Laboratory Report Date	04/25/94	04/25/94	09/21/94	05/20/94	09/22/94	11/07/94	11/07/94
Component							
Open Cup Flash Point	>180 F	>180 F	NA	>180 F	NA	NA	NA
Reactive Cyanide	ND	ND	NA	NA	NA	NA	NA
Reactive Sulfide	11.7	ND	NA	40.6	NA	NA	NA
pH	9.0	7.2	NA	9.2	NA	NA	NA
Total Cyanide	NA	NA	NA	ND	NA	NA	NA
Total Solids	NA	NA	NA	82.8%	NA	NA	NA
TCLP Arsenic	ND	ND	NA	ND	NA	ND	ND
TCLP Barium	0.49	2.3	NA	0.39	NA	0.58	0.9
TCLP Cadmium	ND	ND	NA	ND	NA	ND	ND
TCLP Chromium	ND	ND	NA	ND	NA	ND	ND
TCLP Lead	ND	0.21	NA	0.17	NA	ND	0.25
TCLP Mercury	ND	ND	NA	ND	NA	ND	ND
TCLP Selenium	ND	ND	NA	ND	NA	ND	ND
TCLP Silver	ND	ND	NA	ND	NA	ND	ND
Total Benzene	NA	NA	4.55	1,140	ND	NA	NA
Total Ethylbenzene	NA	NA	4.5	NA	NA	NA	NA
Total Toluene	NA	NA	11.8	NA	NA	NA	NA
Total Xylenes	NA	NA	37.3	NA	NA	NA	NA
Total BTEX	NA	NA	58.2	NA	NA	NA	NA
TCLP Benzene	ND	ND	NA	55	NA	ND	ND
TCLP Carbon Tetrachloride	ND	ND	NA	ND	NA	ND	ND
TCLP Chlorobenzene	ND	ND	NA	ND	NA	ND	ND
TCLP Chloroform	ND	ND	NA	ND	NA	ND	ND
TCLP o-Cresol	ND	ND	NA	ND	NA	ND	ND
TCLP m-Cresol	ND	ND	NA	ND	NA	ND	ND

Five Acres Sample Analytical Results

	Grab 10A	Grab 11B	Groundwater 80s Tank Farm	Soil SW Property	Soil, SW Property Roll-Off Box	Soil North Pile	Soil Southwest Pile
Laboratory Report Date	95149	95150	105335	96596	105604	109551	109552
Laboratory ID Number	79346	79347	93506	82557	93507	99305	99306
Sample ID Number	04/25/94	04/25/94	09/21/94	05/20/94	09/22/94	11/07/94	11/07/94
Component							
TCLP p-Cresol	ND	ND	NA	ND	NA	ND	ND
TCLP Total Cresol	ND	ND	NA	ND	NA	ND	ND
TCLP 1,4-Dichlorobenzene	ND	ND	NA	ND	NA	ND	ND
TCLP 1,2-Dichloroethane	ND	ND	NA	ND	NA	ND	ND
TCLP 1,1-Dichloroethene	ND	ND	NA	ND	NA	ND	ND
TCLP 2,4-Dinitrotoluene	ND	ND	NA	ND	NA	ND	ND
TCLP Hexachlorobenzene	ND	ND	NA	ND	NA	ND	ND
TCLP Hexachloro-1,3-butadiene	ND	ND	NA	ND	NA	ND	ND
TCLP Hexachloroethane	ND	ND	NA	ND	NA	ND	ND
TCLP Methyl Ethyl Ketone	ND	ND	NA	ND	NA	ND	ND
TCLP Nitrobenzene	ND	ND	NA	ND	NA	ND	ND
TCLP Pentachlorophenol	ND	ND	NA	ND	NA	ND	ND
TCLP Pyridine	ND	ND	NA	ND	NA	ND	ND
TCLP Tetrachloroethylene	ND	ND	NA	ND	NA	ND	ND
TCLP Trichloroethylene	ND	ND	NA	ND	NA	ND	ND
TCLP 2,4,5-Trichlorophenol	ND	ND	NA	ND	NA	ND	ND
TCLP 2,4,6-Trichlorophenol	ND	ND	NA	ND	NA	ND	ND
TCLP Vinyl Chloride	ND	ND	NA	ND	NA	ND	ND

Five Acres Sample Analytical Results

	Soil	80s Tank Farm	80s Tank Farm	80s Tank Farm	80s Tank Farm	80s Tank Farm
	SW Pile 5 acres	Soil, 1-Soil-Shallow	Groundwater, 1-SGW	Groundwater, 1-DGW	Soil, 2-Soil-Shallow	Groundwater, 2-SGW
Laboratory ID Number	114282	100768	100769	101044	101043	100767
Sample ID Number	05533	86754	86755	86756	86752	86753
Laboratory Report Date	01/16/95	07/07/94	07/07/94	07/07/94	07/07/94	07/07/94
Component						
Open Cup Flash Point	NA	NA	NA	NA	NA	NA
Reactive Cyanide	NA	NA	NA	NA	NA	NA
Reactive Sulfide	NA	NA	NA	NA	NA	NA
pH	NA	NA	NA	NA	NA	NA
Total Cyanide	NA	NA	NA	NA	NA	NA
Total Solids	NA	NA	NA	NA	NA	NA
TCLP Arsenic	NA	NA	NA	NA	NA	NA
TCLP Barium	NA	NA	NA	NA	NA	NA
TCLP Cadmium	NA	NA	NA	NA	NA	NA
TCLP Chromium	NA	NA	NA	NA	NA	NA
TCLP Lead	NA	NA	NA	NA	NA	NA
TCLP Mercury	NA	NA	NA	NA	NA	NA
TCLP Selenium	NA	NA	NA	NA	NA	NA
TCLP Silver	NA	NA	NA	NA	NA	NA
Total Benzene	NA	122	500	398	0.007	0.004
Total Ethylbenzene	NA	0.571	2.9	0.118	ND	ND
Total Toluene	NA	0.498	1.5	3.00	0.005	ND
Total Xylenes	NA	1.53	14.2	0.547	ND	ND
Total BTEX	NA	124	518	402	0.012	0.004
TCLP Benzene	ND	NA	NA	NA	NA	NA
TCLP Carbon Tetrachloride	ND	NA	NA	NA	NA	NA
TCLP Chlorobenzene	ND	NA	NA	NA	NA	NA
TCLP Chloroform	ND	NA	NA	NA	NA	NA
TCLP o-Cresol	ND	NA	NA	NA	NA	NA
TCLP m-Cresol	ND	NA	NA	NA	NA	NA

Five Acres Sample Analytical Results

	Soil	80s Tank Farm	80s Tank Farm	80s Tank Farm	80s Tank Farm	80s Tank Farm
	SW Pile 5 acres	Soil, 1-Soil-Shallow	Groundwater, 1-SGW	Groundwater, 1-DGW	Soil, 2-Soil-Shallow	Groundwater, 2-SGW
Laboratory ID Number	114282	100768	100769	101044	101043	100767
Sample ID Number	05533	86754	86755	86756	86752	86753
Laboratory Report Date	01/16/95	07/07/94	07/07/94	07/07/94	07/07/94	07/07/94
Component						
TCLP p-Cresol	ND	NA	NA	NA	NA	NA
TCLP Total Cresol	ND	NA	NA	NA	NA	NA
TCLP 1,4-Dichlorobenzene	ND	NA	NA	NA	NA	NA
TCLP 1,2-Dichloroethane	ND	NA	NA	NA	NA	NA
TCLP 1,1-Dichloroethene	ND	NA	NA	NA	NA	NA
TCLP 2,4-Dinitrotoluene	ND	NA	NA	NA	NA	NA
TCLP Hexachlorobenzene	ND	NA	NA	NA	NA	NA
TCLP Hexachloro-1,3-butadiene	ND	NA	NA	NA	NA	NA
TCLP Hexachloroethane	ND	NA	NA	NA	NA	NA
TCLP Methyl Ethyl Ketone	ND	NA	NA	NA	NA	NA
TCLP Nitrobenzene	ND	NA	NA	NA	NA	NA
TCLP Pentachlorophenol	ND	NA	NA	NA	NA	NA
TCLP Pyridine	ND	NA	NA	NA	NA	NA
TCLP Tetrachloroethylene	ND	NA	NA	NA	NA	NA
TCLP Trichloroethylene	ND	NA	NA	NA	NA	NA
TCLP 2,4,5-Trichlorophenol	ND	NA	NA	NA	NA	NA
TCLP 2,4,6-Trichlorophenol	ND	NA	NA	NA	NA	NA
TCLP Vinyl Chloride	ND	NA	NA	NA	NA	NA

Five Acres Sample Analytical Results

	80s Tank Farm Soil, 3-Soil-Shallow	80s Tank Farm Soil, 3-Soil-Deep	80s Tank Farm Soil, 4-Soil	80s Tank Farm Groundwater, 4-SGW	80s Tank Farm Soil, 5-Soil-Shallow	80s Tank Farm Groundwater, 5-SGW
Laboratory ID Number	100779	100765	100763	100793	100780	100766
Sample ID Number	86748	86749	86742	86743	86750	86751
Laboratory Report Date	07/07/94	07/07/94	07/07/94	07/07/94	07/07/94	07/07/94
Component						
Open Cup Flash Point	NA	NA	NA	NA	NA	NA
Reactive Cyanide	NA	NA	NA	NA	NA	NA
Reactive Sulfide	NA	NA	NA	NA	NA	NA
pH	NA	NA	NA	NA	NA	NA
Total Cyanide	NA	NA	NA	NA	NA	NA
Total Solids	NA	NA	NA	NA	NA	NA
TCLP Arsenic	NA	NA	NA	NA	NA	NA
TCLP Barium	NA	NA	NA	NA	NA	NA
TCLP Cadmium	NA	NA	NA	NA	NA	NA
TCLP Chromium	NA	NA	NA	NA	NA	NA
TCLP Lead	NA	NA	NA	NA	NA	NA
TCLP Mercury	NA	NA	NA	NA	NA	NA
TCLP Selenium	NA	NA	NA	NA	NA	NA
TCLP Silver	NA	NA	NA	NA	NA	NA
Total Benzene	125	0.534	0.003	0.002	0.08	0.233
Total Ethylbenzene	11.4	0.015	0.019	0.011	0.052	0.115
Total Toluene	34.1	0.073	0.004	0.003	0.004	0.0493
Total Xylenes	49.7	0.095	0.071	0.041	0.074	0.598
Total BTEX	220	0.717	0.097	0.057	0.21	0.995
TCLP Benzene	NA	NA	NA	NA	NA	NA
TCLP Carbon Tetrachloride	NA	NA	NA	NA	NA	NA
TCLP Chlorobenzene	NA	NA	NA	NA	NA	NA
TCLP Chloroform	NA	NA	NA	NA	NA	NA
TCLP o-Cresol	NA	NA	NA	NA	NA	NA
TCLP m-Cresol	NA	NA	NA	NA	NA	NA

Five Acres Sample Analytical Results

	80s Tank Farm Soil, 3-Soil-Shallow	80s Tank Farm Soil, 3-Soil-Deep	80s Tank Farm Soil, 4-Soil	80s Tank Farm Groundwater, 4-SGW	80s Tank Farm Soil, 5-Soil-Shallow	80s Tank Farm Groundwater, 5-SGW
Laboratory ID Number	100779	100765	100763	100793	100780	100766
Sample ID Number	86748	86749	86742	86743	86750	86751
Laboratory Report Date	07/07/94	07/07/94	07/07/94	07/07/94	07/07/94	07/07/94
Component						
TCLP p-Cresol	NA	NA	NA	NA	NA	NA
TCLP Total Cresol	NA	NA	NA	NA	NA	NA
TCLP 1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA
TCLP 1,2-Dichloroethane	NA	NA	NA	NA	NA	NA
TCLP 1,1-Dichloroethene	NA	NA	NA	NA	NA	NA
TCLP 2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA
TCLP Hexachlorobenzene	NA	NA	NA	NA	NA	NA
TCLP Hexachloro-1,3-butadiene	NA	NA	NA	NA	NA	NA
TCLP Hexachloroethane	NA	NA	NA	NA	NA	NA
TCLP Methyl Ethyl Ketone	NA	NA	NA	NA	NA	NA
TCLP Nitrobenzene	NA	NA	NA	NA	NA	NA
TCLP Pentachlorophenol	NA	NA	NA	NA	NA	NA
TCLP Pyridine	NA	NA	NA	NA	NA	NA
TCLP Tetrachloroethylene	NA	NA	NA	NA	NA	NA
TCLP Trichloroethylene	NA	NA	NA	NA	NA	NA
TCLP 2,4,5-Trichlorophenol	NA	NA	NA	NA	NA	NA
TCLP 2,4,6-Trichlorophenol	NA	NA	NA	NA	NA	NA
TCLP Vinyl Chloride	NA	NA	NA	NA	NA	NA

Five Acres Sample Analytical Results

	80s Tank Farm Soil, 6-Soil-Shallow	80s Tank Farm Soil, 6-Soil-Deep	80s Tank Farm Soil, 7-Soil	80s Tank Farm Groundwater, 7-SGW
Laboratory ID Number	100777	100778	100776	100764
Sample ID Number	86746	86747	86744	86745
Laboratory Report Date	07/07/94	07/07/94	07/07/94	07/07/94
Component				
Open Cup Flash Point	NA	NA	NA	NA
Reactive Cyanide	NA	NA	NA	NA
Reactive Sulfide	NA	NA	NA	NA
pH	NA	NA	NA	NA
Total Cyanide	NA	NA	NA	NA
Total Solids	NA	NA	NA	NA
TCLP Arsenic	NA	NA	NA	NA
TCLP Barium	NA	NA	NA	NA
TCLP Cadmium	NA	NA	NA	NA
TCLP Chromium	NA	NA	NA	NA
TCLP Lead	NA	NA	NA	NA
TCLP Mercury	NA	NA	NA	NA
TCLP Selenium	NA	NA	NA	NA
TCLP Silver	NA	NA	NA	NA
Total Benzene	164	32.1	6.28	21.4
Total Ethylbenzene	2.76	0.015	25.7	40.8
Total Toluene	5.59	0.054	65.5	102
Total Xylenes	9.74	0.032	106	29.4
Total BTEX	182	32.2	204	194
TCLP Benzene	NA	NA	NA	NA
TCLP Carbon Tetrachloride	NA	NA	NA	NA
TCLP Chlorobenzene	NA	NA	NA	NA
TCLP Chloroform	NA	NA	NA	NA
TCLP o-Cresol	NA	NA	NA	NA
TCLP m-Cresol	NA	NA	NA	NA

Five Acres Sample Analytical Results

	80s Tank Farm Soil, 6-Soil-Shallow	80s Tank Farm Soil, 6-Soil-Deep	80s Tank Farm Soil, 7-Soil	80s Tank Farm Groundwater, 7-SGW
Laboratory ID Number	100777	100778	100776	100764
Sample ID Number	86746	86747	86744	86745
Laboratory Report Date	07/07/94	07/07/94	07/07/94	07/07/94
Component				
TCLP p-Cresol	NA	NA	NA	NA
TCLP Total Cresol	NA	NA	NA	NA
TCLP 1,4-Dichlorobenzene	NA	NA	NA	NA
TCLP 1,2-Dichloroethane	NA	NA	NA	NA
TCLP 1,1-Dichloroethene	NA	NA	NA	NA
TCLP 2,4-Dinitrotoluene	NA	NA	NA	NA
TCLP Hexachlorobenzene	NA	NA	NA	NA
TCLP Hexachloro-1,3-butadiene	NA	NA	NA	NA
TCLP Hexachloroethane	NA	NA	NA	NA
TCLP Methyl Ethyl Ketone	NA	NA	NA	NA
TCLP Nitrobenzene	NA	NA	NA	NA
TCLP Pentachlorophenol	NA	NA	NA	NA
TCLP Pyridine	NA	NA	NA	NA
TCLP Tetrachloroethylene	NA	NA	NA	NA
TCLP Trichloroethylene	NA	NA	NA	NA
TCLP 2,4,5-Trichlorophenol	NA	NA	NA	NA
TCLP 2,4,6-Trichlorophenol	NA	NA	NA	NA
TCLP Vinyl Chloride	NA	NA	NA	NA

Catalyst Sample Analytical Results

Summary

Spent catalysts are generated from a variety of processes at the Blue Island Refinery. In addition, unused catalysts are occasionally deemed unneeded, and must therefore be discarded. Numerous catalyst samples have been collected at the Clark Blue Island Refinery. The samples include a grab FCC catalyst sample, a catalyst balls grab sample (unused catalyst), an aluminum tower waste catalyst sample, and a sample of R-50 platform catalyst. The FCC catalyst sample and the catalyst balls sample were analyzed for various characteristics including the TCLP. The aluminum tower waste catalyst sample was analyzed for TCLP and PCBs, and the volatile constituents of the RCRA F001 through F005 listed wastes. The R-50 platform catalyst sample was analyzed for TCLP constituents.

The catalyst samples analyzed for various physical characteristics (pH, reactivity, ignitability, etc.) were within acceptable limits for all components. The TCLP analyses revealed detectable concentrations of arsenic in one sample, barium in three samples, cadmium in one sample, chromium in one sample, and lead in two samples. PCBs were not detected in the aluminum tower waste catalyst sample. Additionally, the aluminum tower waste catalyst sample revealed acetone in the F003 listed waste analysis and cresols or cresylic acid in the F004 listed waste analysis.

Characterization Guidelines

In general, existing analytical results from catalyst samples consistently indicated the presence of TCLP inorganics. Therefore, at a minimum catalyst samples should be analyzed for TCLP constituents during waste characterization for disposal. Additional analyses may be advised for catalysts that come into contact with hazardous organic constituents during their process life, and all analyses should be selected on a wastestream dependant basis. Existing documentation, such as material safety data sheets and product profile materials, should be used to identify target parameters for proper characterization of catalyst.

Catalyst Sample Analytical Results

	Grab FCC Catalyst	Catalyst Balls 30C	Waste Grab Aluminum Tower Catalyst	R-50 Platform Catalyst
Laboratory ID Number	95151	95383	104320	110924
Sample ID Number	79348	80187	92290	00575
Laboratory Report Date	04/25/94	05/04/94	08/31/94	11/22/94
Component				
Open Cup Flash Point	>180 F	>180 F	>180 F	NA
Reactive Cyanide	ND	ND	ND	NA
Reactive Sulfide	ND	ND	ND	NA
pH	6.3	4.33	5.54	NA
Closed Cup Flash Point	NA	NA	NA	NA
Total Cyanide	NA	NA	ND	NA
Extractable Organic Halogens	NA	NA	NA	NA
Paint Filter	NA	NA	Pass	NA
Total Phenolics	NA	NA	ND	NA
Total Solids	NA	NA	NA	NA
Specific Gravity	NA	NA	NA	NA
TCLP Arsenic	ND	ND	0.74	ND
TCLP Barium	0.36	ND	0.16	1.8
TCLP Cadmium	ND	0.03	ND	ND
TCLP Chromium	ND	ND	ND	0.1
TCLP Lead	ND	ND	0.1	0.48
TCLP Mercury	ND	ND	ND	ND
TCLP Selenium	ND	ND	ND	ND
TCLP Silver	ND	ND	ND	ND
TCLP Benzene	ND	ND	ND	ND
TCLP Carbon Tetrachloride	ND	ND	ND	ND
TCLP Chlorobenzene	ND	ND	ND	ND
TCLP Chloroform	ND	ND	ND	ND
TCLP o-Cresol	ND	ND	ND	ND
TCLP m-Cresol	ND	ND	ND	ND
TCLP p-Cresol	ND	ND	ND	ND

Catalyst Sample Analytical Results

	Grab FCC Catalyst	Catalyst Balls 30C	Waste Grab Aluminum Tower Catalyst	R-50 Platform Catalyst
Laboratory ID Number	95151	95383	104320	110924
Sample ID Number	79348	80187	92290	00575
Laboratory Report Date	04/25/94	05/04/94	08/31/94	11/22/94
Component				
TCLP Total Cresol	ND	ND	ND	ND
TCLP 1,4-Dichlorobenzene	ND	ND	ND	ND
TCLP 1,2-Dichloroethane	ND	ND	ND	ND
TCLP 1,1-Dichloroethene	ND	ND	ND	ND
TCLP 2,4-Dinitrotoluene	ND	ND	ND	ND
TCLP Hexachlorobenzene	ND	ND	ND	ND
TCLP Hexachloro-1,3-butadiene	ND	ND	ND	ND
TCLP Hexachloroethane	ND	ND	ND	ND
TCLP Methyl Ethyl Ketone	ND	ND	ND	ND
TCLP Nitrobenzene	ND	ND	ND	ND
TCLP Pentachlorophenol	ND	ND	ND	ND
TCLP Pyridine	ND	ND	ND	ND
TCLP Tetrachloroethylene	ND	ND	ND	ND
TCLP Trichloroethylene	ND	ND	ND	ND
TCLP 2,4,5-Trichlorophenol	ND	ND	ND	ND
TCLP 2,4,6-Trichlorophenol	ND	ND	ND	ND
TCLP Vinyl Chloride	ND	ND	ND	ND
Total PCB 1221	NA	NA	ND	NA
Total PCB 1232	NA	NA	ND	NA
Total PCB 1016 (1242)	NA	NA	ND	NA
Total PCB 1248	NA	NA	ND	NA
Total PCB 1254	NA	NA	ND	NA
Total PCB 1260	NA	NA	ND	NA
Total PCB	NA	NA	ND	NA
F001				
Total Tetrachloroethylene	NA	NA	ND	NA

Catalyst Sample Analytical Results

	Grab FCC Catalyst	Catalyst Balls 30C	Waste Grab Aluminum Tower Catalyst	R-50 Platform Catalyst
Laboratory ID Number	95151	95383	104320	110924
Sample ID Number	79348	80187	92290	00575
Laboratory Report Date	04/25/94	05/04/94	08/31/94	11/22/94
Component				
Total Trichloroethylene	NA	NA	ND	NA
Total Methylene Chloride	NA	NA	ND	NA
Total 1,1,1-Trichloroethane	NA	NA	ND	NA
Total Carbon Tetrachloride	NA	NA	ND	NA
F002				
Total Tetrachloroethylene	NA	NA	ND	NA
Total Methylene Chloride	NA	NA	ND	NA
Total Trichloroethylene	NA	NA	ND	NA
Total 1,1,1-Trichloroethane	NA	NA	ND	NA
Total Chlorobenzene	NA	NA	ND	NA
Total 1,1,2-Trichloro-1,2,2-Trifluoroethane	NA	NA	ND	NA
Total Ortho-Dichlorobenzene	NA	NA	ND	NA
Total Trichlorofluoromethane	NA	NA	ND	NA
Total 1,1,2-Trichloroethane	NA	NA	ND	NA
F003				
Total Xylenes	NA	NA	ND	NA
Total Acetone	NA	NA	1.5	NA
Total Ethyl Acetate	NA	NA	ND	NA
Total Ethyl Benzene	NA	NA	ND	NA
Total Ether	NA	NA	ND	NA
Total Methyl Isobutyl Ketone	NA	NA	ND	NA
Total n-Butyl Alcohol	NA	NA	ND	NA
Total Cyclohexanone	NA	NA	ND	NA
Total Methanol	NA	NA	ND	NA
F004				

Catalyst Sample Analytical Results

	Grab FCC Catalyst	Catalyst Balls 30C	Waste Grab Aluminum Tower Catalyst	R-50 Platform Catalyst
Laboratory ID Number	95151	95383	104320	110924
Sample ID Number	79348	80187	92290	00575
Laboratory Report Date	04/25/94	05/04/94	08/31/94	11/22/94
Component				
Total Cresols or Cresylic Acid	NA	NA	0.244	NA
Total Nitrobenzene	NA	NA	ND	NA
F005				
Total Toluene	NA	NA	ND	NA
Total Methyl Ethyl Ketone	NA	NA	ND	NA
Total Carbon Disulfides	NA	NA	ND	NA
Total Isobutanaol	NA	NA	ND	NA
Total Pyridine	NA	NA	ND	NA
Total 2-Ethoxyethanol	NA	NA	ND	NA
Total Benzene	NA	NA	ND	NA
Total 2-Nitropropane	NA	NA	ND	NA

Sandblasting Area Removal and Upgrade
Action Plan

Sandblasting activities outside the east side of the Weld Shop at the Main Refinery have resulted in the dispersal of sandblast grit onto the ground of the surrounding area. Although this sandblast grit is not a hazardous waste, it has occasionally drifted offsite creating a visual problem in the area. This plan provides a summary of the procedures which should be followed to remove released sandblast grit, and mitigate the potential for future releases of this material.

Removal Action

Released sandblast grit in the area should be removed by scraping the upper few inches of soil in the vicinity of the sandblasting area. This can be done with a front-end loader, or by hand with shovels. The material should be placed in a suitable container (e.g., roll-off box) and transported offsite for disposal. A sample of spent sandblast grit has been analyzed recently to determine if it exhibits any hazardous waste characteristics. The analytical results from this sample indicated that no TCLP metal constituents above the regulatory limits are present in the material; therefore, the material can be disposed of as a solid waste (special waste).

Sandblast Unit Upgrade

Currently, the sandblast unit consists of a small metal shed covering the sandblast equipment. The shed has walls on the east and west sides, and a roof. The backside of the shed (north side) is open, allowing sandblast grit to drift from the unit through the chainlink fence on the north side of the Main Refinery property line.

Minimal upgrades to the sandblast unit would significantly decrease the potential for sandblast grit release. The north side of the sandblast shed should be enclosed with corrugated metal siding or plywood. Sandblast grit which accumulates on the floor of the shed should be removed and placed in a container on a regular basis, preferably after each sandblasting event. Any sandblast grit which is released from the unit should be cleaned up immediately. A dedicated container (e.g., a drum) should be placed near the unit to accumulate sandblast grit. The container should be labeled with the words "sandblast grit", and removed for offsite disposal when it is filled. The Clark Blue Island Environmental Department should be notified when the container is completely filled. The Environmental Department will arrange for offsite disposal. Typically, the material can be disposed of as a special waste. Proper personal protective equipment should be worn during sandblasting activities.

Clark Blue Island Environmental Guidance Brief
Sludge Management

Introduction

Appropriate management of sludge generated at the Clark Blue Island refinery is essential for compliance with hazardous waste regulations under the Resource Conservation and Recovery Act (RCRA). There are four types of sludge generated at the refinery which are listed as RCRA hazardous wastes. These sludges, and their regulatory definitions are as follows:

- Primary Oil/Water/Solids Separation Sludge (F037) - Any sludge generated from the gravitational separation of oil/water/solids during the storage of treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in oil/water/solids separators, tanks and impoundments, ditches and other conveyances, sumps, and stormwater units receiving dry weather flow.

- Secondary Oil/Water/Solids Separation Sludge (F038) - Any sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in induced air floatation units, tanks and impoundments, and all sludges generated in DAF units.

- Heat Exchanger Bundle Cleaning Sludge (K050) - Sludges and solids generated from bundle cleaning activities.

- API Separator Sludge (K051) - Sludge generated from the API Separator at the oily water treatment system.

In general, Clark Blue Island employees will not have extensive contact with these wastes. Generation of these sludges usually occurs during cleanout activities at sumps, catch basins, or the API Separator. The purpose of this guidance brief is to familiarize Clark Blue Island employees with appropriate sludge management protocol. The Clark Blue Island Environmental Department should be contacted prior to the commencement of any sludge handling activity.

Sludge Management at Cleanout Basins

Periodic cleanout of sumps and drains at the refinery is necessary to prevent clogging of the sewer system with sludge. These cleanout episodes result in the generation of solids which will typically be classified as hazardous waste sludges. Primary and bundle cleaning sludges are the most common examples at the main refinery. In general, it is Clark policy to have these cleanout activities be conducted by contractors; however, management and disposal of hazardous waste is still Clark's responsibility. The following guidelines should be followed before, during, and after sludge cleanout events:

- The Clark Blue Island Environmental Department should be contacted prior to planning a cleanout.

- Contractor's performing the cleanout must have all appropriate training (OSHA) and certifications.
- Sludges should be accumulated in a suitable container immediately upon generation (as soon as it is removed from a basin or sump).
- Sludges removed from the cleanout should never be placed directly on the ground, or anywhere that a release to the environment could occur.
- Appropriate personal protective equipment (PPE) should be worn at all times.
- Containers holding sludge should be closed when not in use.
- All accumulation containers should be labelled according to Clark protocol.
- After containers are filled, they should placed in a central location for safekeeping and inspection.
- Sludges should not be transported off the main refinery, or on any public road, unless they are manifested to a permitted treatment, storage, or disposal facility (TSDF).
- All sludge must be transported offsite by a licensed transporter to a permitted TSDF within 90 days of the time of generation.

Most of the labelling, inspecting, and recordkeeping requirements listed above will be conducted by the Environmental Department.

Sludge Management at the Oily Water Treatment System

As with the cleanout basins, sludge removal from the oily water treatment system will be conducted by contractors. The most common sludge generated during these cleaning episodes will be API Separator sludge. In addition, float from the DAF unit at the treatment system is also a hazardous waste which may be generated periodically. All procedures listed for management of sludge from cleanout basins also apply to sludge from the API Separator. This sludge is typically run through a centrifuge for further separation prior to accumulation of the sludge. The actual point of generation occurs at the time the sludge is removed from the API Separator; therefore, there should be no interim storage of sludge prior to the centrifuge step. Accumulation of sludge begins as soon as the material is removed from the centrifuge and placed in suitable containers. The oil removed from the centrifuge is recycled at the refinery.

Proposed Action Plan
for
Management of Used Oil
at
Clark Blue Island Refinery

Purpose

The purpose of this proposed plan is to provide an alternative to the current method of used oil management at the Clark Blue Island Refinery. Used oil is generated as a result of maintenance activities at various units throughout the Refinery. Currently, used oil generated during these maintenance activities is collected at the unit, and then stored in drums and tanks at the Maintenance Department. This practice creates space limitations at the Maintenance Department, and transport of used oil across the Refinery as well as storage and management limitations has resulted in safety and environmental concerns. This plan presents an alternative method of managing used oil at the Refinery which would minimize safety and environmental concerns.

Scope

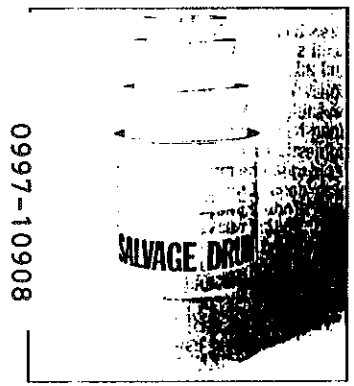
At the time of generation, used oil would be accumulated in a designated area within the unit or area it is generated. The designated area would be selected by maintenance personnel and unit operators, with assistance from safety and environmental. Maintenance personnel working in the unit would be responsible for accumulation and management of the used oil while in the unit. Used oil would be accumulated in 55-gallon drums at the designated accumulation area. These accumulation drums would be equipped with a polyethylene drum funnel and a drum tray. Examples of each of these devices are shown on Attachment A. The purpose of these devices is to prevent spills during pouring and provide secondary containment for the accumulation container.

When not being filled or emptied, the accumulation containers shall remain closed. Maintenance personnel will be responsible for ensuring that the containers are kept closed when not in use, and that the containers are properly labeled. When accumulation containers are filled, maintenance personnel will notify the Environmental Department. The Environmental Department will be responsible for arranging offsite disposal of the used oil.

Size L x W x H (In.)	Price Each
23 x 27 x 69	479.00

8 or more

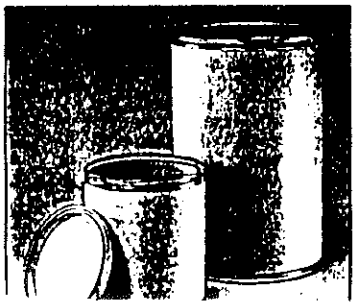
ns



Inside Dia. (In.)	Inside Ht. (In.)	Gauge	Price Each
14	24	18	58.95
18¼	28	18	69.80
22½	34	16	95.00
25⅞	38	16	156.65

or more.

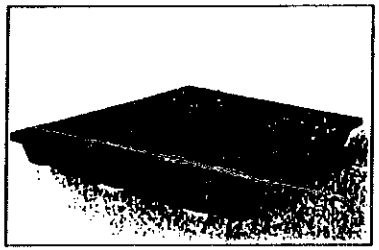
Locking Rims



Reusable Plastic Pallets

HIGH DENSITY POLYETHYLENE

Durable 40" x 48" pallets come in light and heavy duty. Light duty features a 2,500 lb. capacity and the heavy duty pallets feature a 3,000 lb. capacity. Green pallets are FDA and USDA accepted for food applications. Black pallets are excellent for industrial applications. NEW!



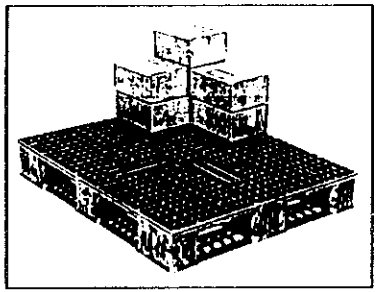
Part No.	Description	Color	Price Each
30200LE	Light Duty	Green	44.50
30202LE	Heavy Duty	Green	67.70
30204LE	Light Duty	Black	40.80
30206LE	Heavy Duty	Black	62.65

Discount: Less 5% 1 or more

Double Stack Plastic Pallets

HIGH DENSITY POLYETHYLENE

Durable 40" x 48" pallets feature a 5,000 lb. capacity and a double deck for stable stacking and added strength. Pallets are USDA and FDA approved. Optional lip around perimeter of pallet prevents product from slipping during transport.



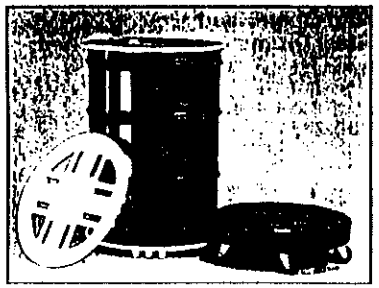
NEW!

Part No.	Description	Color	Price Each
30212LE	Without Lip	Black	84.60
30214LE	With Lip	Black	86.20
30208LE	Without Lip	Blue	89.82
30210LE	With Lip	Blue	93.65

Discount: Less 5% 1 or more

Universal Drum Dolly and Round Plastic Pallet

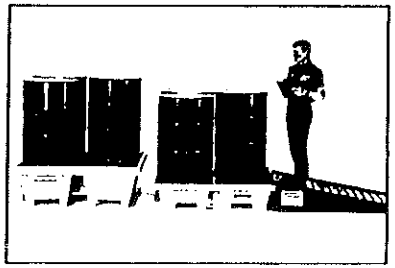
Universal drum dolly supports loads up to 500 lbs. Ideal for 30- and 55-gallon drums. Rugged Duramold™ construction is seamless, rustproof, and easy to clean. Color is black. Round white pallet, made of high impact plastic, holds up to 1,000 lbs., and operates in temperatures up to 120°F. Pallet has



Hazardous Material Storage Pallets

POLYETHYLENE

Pallets safely hold four 55-gal. drums and feature translucent yellow sides and removable black decking. Large pallet has a 94-gal. sump capacity and 6,000 lb. maximum load capacity. Small pallet has a 70 gal. sump capacity and 3,000 lb. maximum load capacity. Polyethylene ramp allows easy access to small pallet and has a 1,000 lb. maximum load capacity. Pallets meet EPA container storage regulation 40 CFR 264 175.



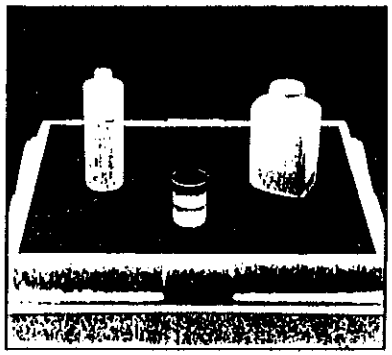
NEW!

Part No.	Description	Size (In.) L x W x H	Price Each
31270LE	Large Pallet	49¾ x 49¾ x 17	338.00
31269LE	Small Pallet	48¾ x 49¾ x 11¾	293.00
31271LE	Ramp	65 x 31 x 12¾	235.00

Lab Spill Containment Tray

POLYETHYLENE

Wide surface holds up to four, 1-gallon bottles. The tray controls spills and overflows of liquid and free-flowing powder chemicals during the transfer of materials in the laboratory or the pharmacy. Removable grate for easy cleaning. Secondary containment capacity is 3 gal. Will not rust.



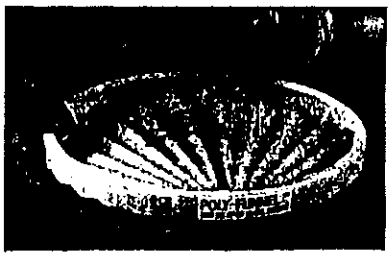
Part No.	Size L x W x H (In.)	Price Each
31278LE	21 x 20½ x 2½	59.00

Discount: Less 5% 4-7; 10% 8 or more

Drainage Drum Funnel

POLYETHYLENE

Funnel allows safe pouring of hazardous liquids as well as passive draining of oil filters, laboratory beakers, and bottles. Drum funnel accommodates all 30- and 55-gallon closed drums. Two inch sidewall



Hazardous Materials Salvage Drum

POLYETHYLENE

100% lightweight polyethylene construction with a 95-gallon capacity. Able to contain a broad range of materials and chemicals including acids and corrosives. Large 27½" opening at top enables easy storage of drums 55 gallons or smaller. Hassle-free twist-on lid. Space-saving nesting capabilities for empty containers. Meets or exceeds all performance requirements of DOT 49 CFR 173.3(C) and is UN certified. Versatile applications include emergency response, on-site storage, transportation, secondary containment, and cleanups.

Part No.	Description	Capacity (G
31260LE	Poly Salvage Drum	95

Drum Containment Center

POLYETHYLENE WITH UV INHIBITOR

The drum tray catches drips and spills before they hit the ground. The geometric shape covers more of the floor surface area than conventional round drip trays cover. Polyethylene tray is resistant to chemicals and handles drums up to 55-gallons. Total liquid capacity is 20 gallons. Use for satellite material dispensing or collecting stations, drum pumping stations, and battery storage.

Part No.	Size Dia. x H. (In.)
31280LE	37 x 8

Discount: Less 5% 4-7; 10% 8 or more

Large Capacity Pail Funnel

POLYETHYLENE

Polyethylene anti-splash pail funnel mounts to any 3½-5- and 6-gallon tight head pails with 11¼" inside diameters, both steel and plastic. Two inch high tapered sidewalls designed to eliminate overspill when pouring and draining liq

Contaminated Soil Sample Analytical Results

Summary

Numerous contaminated soil samples have been collected from the Clark Blue Island facility. Generally, contaminated soil samples are collected as a result of a spill or release onto the ground at various locations throughout the refinery. Analytical results of contaminated soil samples from the refinery have been analyzed TCLP constituents, benzene, toluene, ethylbenzene and xylenes (BTEX), PCBs, and total volatile constituents.

The RCRA characteristics analyses revealed reactive sulfide concentrations ranging from non-detect to 922 parts per million (ppm), with all other RCRA characteristics within acceptable limits. One soil sample analyzed for total inorganics revealed detectable concentrations of arsenic, copper, mercury, and zinc. Many samples analyzed for BTEX contained detectable concentrations of benzene and ethylbenzene in one sample and toluene and xylenes in two samples. The TCLP inorganic analyses revealed detectable concentrations of barium in numerous samples, as well as cadmium, lead, and zinc in other samples. Benzene was detected in one TCLP organic analysis. No detectable concentrations were observed in the PCBs or the RCRA F001 through F005 listed waste analyses.

Characterization Guidelines

Selection of appropriate analyses for contaminated soils generated by specific wastestreams should be dependant on the constituents of the wastestream; however, existing sample documentation does provide adequate characterization of contaminated soil generated from non-specific wastestreams. During sampling investigations of contaminated soil resulting from a non-specific wastestream (such as in spills), contaminated soils should be analyzed for total inorganics, total volatile organics, and potentially PCBs. Samples should be analyzed for TCLP contaminants and potentially PCBs during waste characterization sampling of contaminated soils generated from non-specific wastestreams.

At minimum, samples of contaminated soil generated from specific wastestreams should be analyzed for the same hazardous constituents recommended for contaminated soils generated from non-specific wastestreams. Additional analyses should be performed if the recommended analyses do not adequately characterize the wastestream from a specific wastestream.

Contaminated Soil Sample Analytical Results

	Soil	Soil Grab	Soil Grab	Soil Grab	Soil Grab	Soil	Soil Grab	Soil Grab
	Cumene Contaminated	55-Gallon Drum	Tank 61	Tank 62	Tank 64	Excavation Soil Piles	20A	20B
Laboratory ID Number	55718	56538	91610	91611	91612	94943	95459	95460
Sample ID Number	36287	34463	73977	73978	73979	78989	79728	79729
Laboratory Report Date	12/08/92	12/16/92	02/24/94	02/24/94	02/24/94	04/20/94	04/29/94	04/29/94
Component								
Total Cyanide	NA	NA	NA	NA	NA	NA	NA	NA
Open Cup Flash Point	NA	NA	>180 F	>180 F	>180 F	>180 F	>180 F	>180 F
Paint Filter	NA	NA	NA	NA	NA	NA	NA	NA
Reactive Cyanide	NA	NA	ND	ND	ND	ND	ND	ND
Reactive Sulfide	NA	NA	ND	360	ND	11.54	ND	ND
Total Phenolics	NA	NA	NA	NA	NA	NA	NA	NA
Total Solids	NA	NA	NA	NA	NA	NA	NA	NA
pH	NA	NA	8.9	7.87	7.64	8.53	8.89	7.9
Specific Gravity	NA	NA	NA	NA	NA	NA	NA	NA
Total Arsenic	NA	1.5	NA	NA	NA	NA	NA	NA
Total Copper	NA	4.3	NA	NA	NA	NA	NA	NA
Total Mercury	NA	0.11	NA	NA	NA	NA	NA	NA
Total Selenium	NA	ND	NA	NA	NA	NA	NA	NA
Total Silver	NA	ND	NA	NA	NA	NA	NA	NA
Total Zinc	NA	19	NA	NA	NA	NA	NA	NA
TCLP Arsenic	NA	NA	ND	ND	ND	ND	ND	ND
TCLP Barium	NA	NA	0.46	0.41	0.34	1.2	0.66	0.44
TCLP Cadmium	NA	NA	ND	ND	ND	ND	ND	ND
TCLP Chromium	NA	NA	ND	ND	ND	ND	ND	ND
TCLP Copper	NA	NA	NA	NA	NA	NA	NA	NA
TCLP Lead	NA	NA	ND	ND	0.14	0.2	0.11	ND
TCLP Mercury	NA	NA	ND	ND	ND	ND	ND	ND
TCLP Nickel	NA	NA	NA	NA	NA	NA	NA	NA
TCLP Selenium	NA	NA	ND	ND	ND	ND	ND	ND
TCLP Silver	NA	NA	ND	ND	ND	ND	ND	ND
TCLP Zinc	NA	NA	NA	NA	NA	NA	NA	NA

Contaminated Soil Sample Analytical Results

	Soil Cumene Contaminated	Soil Grab 55-Gallon Drum	Soil Grab Tank 61	Soil Grab Tank 62	Soil Grab Tank 64	Soil Excavation Soil Piles	Soil Grab 20A	Soil Grab 20B
Laboratory ID Number	55718	56538	91610	91611	91612	94943	95459	95460
Sample ID Number	36287	34463	73977	73978	73979	78989	79728	79729
Laboratory Report Date	12/08/92	12/16/92	02/24/94	02/24/94	02/24/94	04/20/94	04/29/94	04/29/94
Component								
TCLP 2,4,6-Trichlorophenol	NA	ND	ND	ND	ND	ND	ND	ND
TCLP Vinyl Chloride	NA	ND	ND	ND	ND	ND	ND	ND
Total PCB 1221	NA	NA	NA	NA	NA	NA	NA	NA
Total PCB 1232	NA	NA	NA	NA	NA	NA	NA	NA
Total PCB 1016 (1242)	NA	NA	NA	NA	NA	NA	NA	NA
Total PCB 1248	NA	NA	NA	NA	NA	NA	NA	NA
Total PCB 1254	NA	NA	NA	NA	NA	NA	NA	NA
Total PCB 1260	NA	NA	NA	NA	NA	NA	NA	NA
Total PCB	NA	NA	NA	NA	NA	NA	NA	NA
F001								
Total Tetrachloroethylene	NA	NA	NA	NA	NA	NA	NA	NA
Total Trichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA
Total Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA
Total 1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Total Carbon Tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA
F002								
Total Tetrachloroethylene	NA	NA	NA	NA	NA	NA	NA	NA
Total Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA
Total Trichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA
Total 1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Total Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
Total 1,1,2-Trichloro-1,2,2-Trifluoroethane	NA	NA	NA	NA	NA	NA	NA	NA
Total Ortho-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
Total Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA
Total 1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA

Contaminated Soil Sample Analytical Results

	Soil Cumene Contaminated	Soil Grab 55-Gallon Drum	Soil Grab Tank 61	Soil Grab Tank 62	Soil Grab Tank 64	Soil Excavation Soil Piles	Soil Grab 20A	Soil Grab 20B
Laboratory ID Number	55718	56538	91610	91611	91612	94943	95459	95460
Sample ID Number	36287	34463	73977	73978	73979	78989	79728	79729
Laboratory Report Date	12/08/92	12/16/92	02/24/94	02/24/94	02/24/94	04/20/94	04/29/94	04/29/94
Component								
Total Benzene	NA	ND	NA	NA	NA	NA	NA	NA
Total Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA
Total Toluene	NA	NA	NA	NA	NA	NA	NA	NA
Total Xylene	NA	NA	NA	NA	NA	NA	NA	NA
Total BTEX	NA	NA	NA	NA	NA	NA	NA	NA
Total Cumene	51.4	NA	NA	NA	NA	NA	NA	NA
TCLP Benzene	NA	ND	ND	ND	ND	ND	ND	ND
TCLP Carbon Tetrachloride	NA	ND	ND	ND	ND	ND	ND	ND
TCLP Chlorobenzene	NA	ND	ND	ND	ND	ND	ND	ND
TCLP Chloroform	NA	ND	ND	ND	ND	ND	ND	ND
TCLP o-Cresol	NA	ND	ND	ND	ND	ND	ND	ND
TCLP m-Cresol	NA	ND	ND	ND	ND	ND	ND	ND
TCLP p-Cresol	NA	ND	ND	ND	ND	ND	ND	ND
TCLP Total Cresol	NA	ND	ND	ND	ND	ND	ND	ND
TCLP 1,4-Dichlorobenzene	NA	ND	ND	ND	ND	ND	ND	ND
TCLP 1,2-Dichloroethane	NA	ND	ND	ND	ND	ND	ND	ND
TCLP 1,1-Dichloroethene	NA	ND	ND	ND	ND	ND	ND	ND
TCLP 2,4-Dinitrotoluene	NA	ND	ND	ND	ND	ND	ND	ND
TCLP Hexachlorobenzene	NA	ND	ND	ND	ND	ND	ND	ND
TCLP Hexachloro-1,3-butadiene	NA	ND	ND	ND	ND	ND	ND	ND
TCLP Hexachloroethane	NA	ND	ND	ND	ND	ND	ND	ND
TCLP Methyl Ethyl Ketone	NA	ND	ND	ND	ND	ND	ND	ND
TCLP Nitrobenzene	NA	ND	ND	ND	ND	ND	ND	ND
TCLP Pentachlorophenol	NA	ND	ND	ND	ND	ND	ND	ND
TCLP Pyridine	NA	ND	ND	ND	ND	ND	ND	ND
TCLP Tetrachloroethylene	NA	ND	ND	ND	ND	ND	ND	ND
TCLP Trichloroethylene	NA	ND	ND	ND	ND	ND	ND	ND
TCLP 2,4,5-Trichlorophenol	NA	ND	ND	ND	ND	ND	ND	ND

0997-1012

Contaminated Soil Sample Analytical Results

	Soil Cumene Contaminated	Soil Grab 55-Gallon Drum	Soil Grab Tank 61	Soil Grab Tank 62	Soil Grab Tank 64	Soil Excavation Soil Piles	Soil Grab 20A	Soil Grab 20B
Laboratory ID Number	55718	56538	91610	91611	91612	94943	95459	95460
Sample ID Number	36287	34463	73977	73978	73979	78989	79728	79729
Laboratory Report Date	12/08/92	12/16/92	02/24/94	02/24/94	02/24/94	04/20/94	04/29/94	04/29/94
Component								
F003								
Total Xylenes	NA	NA	NA	NA	NA	NA	NA	NA
Total Acetone	NA	NA	NA	NA	NA	NA	NA	NA
Total Ethyl Acetate	NA	NA	NA	NA	NA	NA	NA	NA
Total Ethyl Benzene	NA	NA	NA	NA	NA	NA	NA	NA
Total Ether	NA	NA	NA	NA	NA	NA	NA	NA
Total Methyl Isobutyl Ketone	NA	NA	NA	NA	NA	NA	NA	NA
Total n-Butyl Alcohol	NA	NA	NA	NA	NA	NA	NA	NA
Total Cyclohexanone	NA	NA	NA	NA	NA	NA	NA	NA
Total Methanol	NA	NA	NA	NA	NA	NA	NA	NA
F004								
Total Cresols or Cresylic Acid	NA	NA	NA	NA	NA	NA	NA	NA
Total Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA
F005								
Total Toluene	NA	NA	NA	NA	NA	NA	NA	NA
Total Methyl Ethyl Ketone	NA	NA	NA	NA	NA	NA	NA	NA
Total Carbon Disulfides	NA	NA	NA	NA	NA	NA	NA	NA
Total Isobutanaol	NA	NA	NA	NA	NA	NA	NA	NA
Total Pyridine	NA	NA	NA	NA	NA	NA	NA	NA
Total 2-Ethoxyethanol	NA	NA	NA	NA	NA	NA	NA	NA
Total Benzene	NA	NA	NA	NA	NA	NA	NA	NA
Total 2-Nitropropane	NA	NA	NA	NA	NA	NA	NA	NA

Contaminated Soil Sample Analytical Results

	Soil Grab 20C	Soil Grab 30A	Soil, East Point Roll-off Box (Drums)	Soil TK 15	Soil Soil Pile	Ameritech Cable Soil, Test Hole 8A	Ameritech Cable Soil, Test Hole 14	Ameritech Cable Soil, Test Hole 10
Laboratory ID Number	95461	95638	99809	102677	104318	108519	108520	108521
Sample ID Number	79731	80186	85917	90006	92288	98274	98275	98276
Laboratory Report Date	04/29/94	05/03/94	06/30/94	08/10/94	08/31/94	10/24/94	10/24/94	10/24/94
Component								
Total Cyanide	NA	NA	NA	ND	ND	NA	NA	NA
Open Cup Flash Point	>180 F	>180 F	>180 F	>180 F	172 F	NA	NA	NA
Paint Filter	NA	NA	NA	NA	Pass	NA	NA	NA
Reactive Cyanide	ND	ND	ND	NA	ND	NA	NA	NA
Reactive Sulfide	ND	ND	ND	922	92.8	NA	NA	NA
Total Phenolics	NA	NA	NA	NA	ND	NA	NA	NA
Total Solids	NA	NA	NA	NA	78.9%	NA	NA	NA
pH	6.87	6.6	8.3	10.1	8.75	NA	NA	NA
Specific Gravity	NA	NA	NA	NA	NA	NA	NA	NA
Total Arsenic	NA	NA	NA	NA	NA	NA	NA	NA
Total Copper	NA	NA	NA	NA	NA	NA	NA	NA
Total Mercury	NA	NA	NA	NA	NA	NA	NA	NA
Total Selenium	NA	NA	NA	NA	NA	NA	NA	NA
Total Silver	NA	NA	NA	NA	NA	NA	NA	NA
Total Zinc	NA	NA	NA	NA	NA	NA	NA	NA
TCLP Arsenic	ND	ND	ND	ND	ND	NA	NA	NA
TCLP Barium	0.83	0.12	0.48	1.2	0.59	NA	NA	NA
TCLP Cadmium	ND	ND	ND	0.04	ND	NA	NA	NA
TCLP Chromium	ND	ND	ND	ND	ND	NA	NA	NA
TCLP Copper	NA	NA	NA	NA	NA	NA	NA	NA
TCLP Lead	ND	ND	ND	ND	0.18	NA	NA	NA
TCLP Mercury	ND	ND	ND	ND	ND	NA	NA	NA
TCLP Nickel	NA	NA	NA	NA	NA	NA	NA	NA
TCLP Selenium	ND	ND	ND	ND	ND	NA	NA	NA
TCLP Silver	ND	ND	ND	ND	ND	NA	NA	NA
TCLP Zinc	NA	NA	NA	NA	NA	NA	NA	NA

0997-10914

Contaminated Soil Sample Analytical Results

	Soil Grab	Soil Grab	Soil, East Point	Soil	Soil	Ameritech Cable	Ameritech Cable	Ameritech Cable
	20C	30A	Roll-off Box (Drums)	TK 15	Soil Pile	Soil, Test Hole 8A	Soil, Test Hole 14	Soil, Test Hole 10
Laboratory ID Number	95461	95638	99809	102677	104318	108519	108520	108521
Sample ID Number	79731	80186	85917	90006	92288	98274	98275	98276
Laboratory Report Date	04/29/94	05/03/94	06/30/94	08/10/94	08/31/94	10/24/94	10/24/94	10/24/94
Component								
Total Benzene	NA	NA	NA	NA	NA	ND	ND	0.002
Total Ethylbenzene	NA	NA	NA	NA	NA	ND	ND	0.018
Total Toluene	NA	NA	NA	NA	NA	ND	0.016	0.005
Total Xylene	NA	NA	NA	NA	NA	ND	0.032	0.038
Total BTEX	NA	NA	NA	NA	NA	ND	0.048	0.063
Total Cumene	NA	NA	NA	NA	NA	NA	NA	NA
TCLP Benzene	ND	ND	ND	ND	4	NA	NA	NA
TCLP Carbon Tetrachloride	ND	ND	ND	ND	ND	NA	NA	NA
TCLP Chlorobenzene	ND	ND	ND	ND	ND	NA	NA	NA
TCLP Chloroform	ND	ND	ND	ND	ND	NA	NA	NA
TCLP o-Cresol	ND	ND	ND	ND	ND	NA	NA	NA
TCLP m-Cresol	ND	ND	ND	ND	ND	NA	NA	NA
TCLP p-Cresol	ND	ND	ND	ND	ND	NA	NA	NA
TCLP Total Cresol	ND	ND	ND	ND	ND	NA	NA	NA
TCLP 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	NA	NA	NA
TCLP 1,2-Dichloroethane	ND	ND	ND	ND	ND	NA	NA	NA
TCLP 1,1-Dichloroethene	ND	ND	ND	ND	ND	NA	NA	NA
TCLP 2,4-Dinitrotoluene	ND	ND	ND	ND	ND	NA	NA	NA
TCLP Hexachlorobenzene	ND	ND	ND	ND	ND	NA	NA	NA
TCLP Hexachloro-1,3-butadiene	ND	ND	ND	ND	ND	NA	NA	NA
TCLP Hexachloroethane	ND	ND	ND	ND	ND	NA	NA	NA
TCLP Methyl Ethyl Ketone	ND	ND	ND	ND	ND	NA	NA	NA
TCLP Nitrobenzene	ND	ND	ND	ND	ND	NA	NA	NA
TCLP Pentachlorophenol	ND	ND	ND	ND	ND	NA	NA	NA
TCLP Pyridine	ND	ND	ND	ND	ND	NA	NA	NA
TCLP Tetrachloroethylene	ND	ND	ND	ND	ND	NA	NA	NA
TCLP Trichloroethylene	ND	ND	ND	ND	ND	NA	NA	NA
TCLP 2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	NA	NA	NA

0997-10915

Contaminated Soil Sample Analytical Results

	Soil Grab 20C	Soil Grab 30A	Soil, East Point Roll-off Box (Drums)	Soil TK 15	Soil Soil Pile	Ameritech Cable Soil, Test Hole 8A	Ameritech Cable Soil, Test Hole 14	Ameritech Cable Soil, Test Hole 10
Laboratory ID Number	95461	95638	99809	102677	104318	108519	108520	108521
Sample ID Number	79731	80186	85917	90006	92288	98274	98275	98276
Laboratory Report Date	04/29/94	05/03/94	06/30/94	08/10/94	08/31/94	10/24/94	10/24/94	10/24/94
Component								
TCLP 2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	NA	NA	NA
TCLP Vinyl Chloride	ND	ND	ND	ND	ND	NA	NA	NA
Total PCB 1221	NA	NA	NA	NA	ND	NA	NA	NA
Total PCB 1232	NA	NA	NA	NA	ND	NA	NA	NA
Total PCB 1016 (1242)	NA	NA	NA	NA	ND	NA	NA	NA
Total PCB 1248	NA	NA	NA	NA	ND	NA	NA	NA
Total PCB 1254	NA	NA	NA	NA	ND	NA	NA	NA
Total PCB 1260	NA	NA	NA	NA	ND	NA	NA	NA
Total PCB	NA	NA	NA	NA	ND	NA	NA	NA
F001								
Total Tetrachloroethylene	NA	NA	NA	NA	NA	NA	NA	NA
Total Trichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA
Total Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA
Total 1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Total Carbon Tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA
F002								
Total Tetrachloroethylene	NA	NA	NA	NA	NA	NA	NA	NA
Total Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA
Total Trichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA
Total 1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Total Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
Total 1,1,2-Trichloro-1,2,2-Trifluoroethane	NA	NA	NA	NA	NA	NA	NA	NA
Total Ortho-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
Total Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA
Total 1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA

0997-10916

Contaminated Soil Sample Analytical Results

	Soil Grab 20C	Soil Grab 30A	Soil, East Point Roll-off Box (Drums)	Soil TK 15	Soil Soil Pile	Ameritech Cable Soil, Test Hole 8A	Ameritech Cable Soil, Test Hole 14	Ameritech Cable Soil, Test Hole 10
Laboratory ID Number	95461	95638	99809	102677	104318	108519	108520	108521
Sample ID Number	79731	80186	85917	90006	92288	98274	98275	98276
Laboratory Report Date	04/29/94	05/03/94	06/30/94	08/10/94	08/31/94	10/24/94	10/24/94	10/24/94
Component								
F003								
Total Xylenes	NA	NA	NA	NA	NA	NA	NA	NA
Total Acetone	NA	NA	NA	NA	NA	NA	NA	NA
Total Ethyl Acetate	NA	NA	NA	NA	NA	NA	NA	NA
Total Ethyl Benzene	NA	NA	NA	NA	NA	NA	NA	NA
Total Ether	NA	NA	NA	NA	NA	NA	NA	NA
Total Methyl Isobutyl Ketone	NA	NA	NA	NA	NA	NA	NA	NA
Total n-Butyl Alcohol	NA	NA	NA	NA	NA	NA	NA	NA
Total Cyclohexanone	NA	NA	NA	NA	NA	NA	NA	NA
Total Methanol	NA	NA	NA	NA	NA	NA	NA	NA
F004								
Total Cresols or Cresylic Acid	NA	NA	NA	NA	NA	NA	NA	NA
Total Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA
F005								
Total Toluene	NA	NA	NA	NA	NA	NA	NA	NA
Total Methyl Ethyl Ketone	NA	NA	NA	NA	NA	NA	NA	NA
Total Carbon Disulfides	NA	NA	NA	NA	NA	NA	NA	NA
Total Isobutanaol	NA	NA	NA	NA	NA	NA	NA	NA
Total Pyridine	NA	NA	NA	NA	NA	NA	NA	NA
Total 2-Ethoxyethanol	NA	NA	NA	NA	NA	NA	NA	NA
Total Benzene	NA	NA	NA	NA	NA	NA	NA	NA
Total 2-Nitropropane	NA	NA	NA	NA	NA	NA	NA	NA

Contaminated Soil Sample Analytical Results

	Soil 127th Field Pile	Soil Petroleum Contaminated	Soil Grab Tank 65 - Dike
Laboratory ID Number	109553	111631	115400
Sample ID Number	99307	02348	06799
Laboratory Report Date	11/07/94	12/01/94	01/23/95
Component			
Total Cyanide	NA	NA	NA
Open Cup Flash Point	NA	NA	NA
Paint Filter	NA	NA	NA
Reactive Cyanide	NA	NA	NA
Reactive Sulfide	NA	NA	NA
Total Phenolics	NA	NA	NA
Total Solids	NA	NA	NA
pH	NA	NA	NA
Specific Gravity	NA	1.23	NA
Total Arsenic	NA	NA	NA
Total Copper	NA	NA	NA
Total Mercury	NA	NA	NA
Total Selenium	NA	NA	NA
Total Silver	NA	NA	NA
Total Zinc	NA	NA	NA
TCLP Arsenic	ND	NA	ND
TCLP Barium	0.64	NA	1.1
TCLP Cadmium	ND	NA	ND
TCLP Chromium	ND	NA	ND
TCLP Copper	NA	ND	NA
TCLP Lead	ND	NA	ND
TCLP Mercury	ND	NA	ND
TCLP Nickel	NA	ND	NA
TCLP Selenium	ND	NA	ND
TCLP Silver	ND	NA	ND
TCLP Zinc	NA	0.5	NA

Contaminated Soil Sample Analytical Results

	Soil 127th Field Pile	Soil Petroleum Contaminated	Soil Grab Tank 65 - Dike
Laboratory ID Number	109553	111631	115400
Sample ID Number	99307	02348	06799
Laboratory Report Date	11/07/94	12/01/94	01/23/95
Component			
Total Benzene	NA	NA	NA
Total Ethylbenzene	NA	NA	NA
Total Toluene	NA	NA	NA
Total Xylene	NA	NA	NA
Total BTEX	NA	NA	NA
Total Cumene	NA	NA	NA
TCLP Benzene	ND	NA	ND
TCLP Carbon Tetrachloride	ND	NA	ND
TCLP Chlorobenzene	ND	NA	ND
TCLP Chloroform	ND	NA	ND
TCLP o-Cresol	ND	NA	ND
TCLP m-Cresol	ND	NA	ND
TCLP p-Cresol	ND	NA	ND
TCLP Total Cresol	ND	NA	ND
TCLP 1,4-Dichlorobenzene	ND	NA	ND
TCLP 1,2-Dichloroethane	ND	NA	ND
TCLP 1,1-Dichloroethene	ND	NA	ND
TCLP 2,4-Dinitrotoluene	ND	NA	ND
TCLP Hexachlorobenzene	ND	NA	ND
TCLP Hexachloro-1,3-butadiene	ND	NA	ND
TCLP Hexachloroethane	ND	NA	ND
TCLP Methyl Ethyl Ketone	ND	NA	ND
TCLP Nitrobenzene	ND	NA	ND
TCLP Pentachlorophenol	ND	NA	ND
TCLP Pyridine	ND	NA	ND
TCLP Tetrachloroethylene	ND	NA	ND
TCLP Trichloroethylene	ND	NA	ND
TCLP 2,4,5-Trichlorophenol	ND	NA	ND

Contaminated Soil Sample Analytical Results

	Soil Grab 20C	Soil Grab 30A	Soil, East Point Roll-off Box (Drums)	Soil TK 15	Soil Soil Pile	Ameritech Cable Soil, Test Hole 8A	Ameritech Cable Soil, Test Hole 14	Ameritech Cable Soil, Test Hole 10
Laboratory ID Number	95461	95638	99809	102677	104318	108519	108520	108521
Sample ID Number	79731	80186	85917	90006	92288	98274	98275	98276
Laboratory Report Date	04/29/94	05/03/94	06/30/94	08/10/94	08/31/94	10/24/94	10/24/94	10/24/94
Component								
TCLP 2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	NA	NA	NA
TCLP Vinyl Chloride	ND	ND	ND	ND	ND	NA	NA	NA
Total PCB 1221	NA	NA	NA	NA	ND	NA	NA	NA
Total PCB 1232	NA	NA	NA	NA	ND	NA	NA	NA
Total PCB 1016 (1242)	NA	NA	NA	NA	ND	NA	NA	NA
Total PCB 1248	NA	NA	NA	NA	ND	NA	NA	NA
Total PCB 1254	NA	NA	NA	NA	ND	NA	NA	NA
Total PCB 1260	NA	NA	NA	NA	ND	NA	NA	NA
Total PCB	NA	NA	NA	NA	ND	NA	NA	NA
F001								
Total Tetrachloroethylene	NA	NA	NA	NA	NA	NA	NA	NA
Total Trichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA
Total Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA
Total 1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Total Carbon Tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA
F002								
Total Tetrachloroethylene	NA	NA	NA	NA	NA	NA	NA	NA
Total Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA
Total Trichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA
Total 1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Total Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
Total 1,1,2-Trichloro-1,2,2-Trifluoroethane	NA	NA	NA	NA	NA	NA	NA	NA
Total Ortho-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
Total Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA
Total 1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA

0997-10920

Contaminated Soil Sample Analytical Results

	Soil 127th Field Pile	Soil Petroleum Contaminated	Soil Grab Tank 65 - Dike
Laboratory ID Number	109553	111631	115400
Sample ID Number	99307	02348	06799
Laboratory Report Date	11/07/94	12/01/94	01/23/95
Component			
F003			
Total Xylenes	NA	ND	NA
Total Acetone	NA	ND	NA
Total Ethyl Acetate	NA	ND	NA
Total Ethyl Benzene	NA	ND	NA
Total Ether	NA	ND	NA
Total Methyl Isobutyl Ketone	NA	ND	NA
Total n-Butyl Alcohol	NA	ND	NA
Total Cyclohexanone	NA	ND	NA
Total Methanol	NA	ND	NA
F004			
Total Cresols or Cresylic Acid	NA		NA
Total Nitrobenzene	NA	ND	NA
F005			
Total Toluene	NA	ND	NA
Total Methyl Ethyl Ketone	NA	ND	NA
Total Carbon Disulfides	NA	ND	NA
Total Isobutanaol	NA	ND	NA
Total Pyridine	NA	ND	NA
Total 2-Ethoxyethanol	NA	ND	NA
Total Benzene	NA	ND	NA
Total 2-Nitropropane	NA	ND	NA

Calumet Sag Channel Sample Analytical Results

Summary

Samples may be collected from a variety of sources, and for a variety of reasons at the Cal Sag Channel. Materials which may be sampled include Channel water, sediment, or dredged material. Existing sampling documentation reveals that two samples were collected from the Calumet Sag Channel. A Channel dock pipe chase sample was analyzed for purgeable organics, while a Channel water intake sample was analyzed for various hazardous characteristics and TCLP constituents.

The Channel dock pipe chase sample revealed detectable concentrations of benzene, toluene, ethylbenzene, xylenes, and cumenes. The Channel water intake sample contained reactive sulfides at a concentration of 114 parts per million, with all other RCRA characteristics within acceptable limits. The Channel water intake sample also revealed detectable concentrations of TCLP barium.

Characterization Guidelines

Previous sampling documentation does not provide adequate characterization of the Calumet Sag Channel media. Analyses selected for Calumet Sag Channel samples should be dependant on the contaminants of concern in a particular media and the purpose of the sampling. The event which created the need for sampling event (e.g., release) should be used as a basis for sampling protocol. Samples collected during investigations in the channel should be analyzed for total inorganics, purgeable organics, base/neutral extractables, acid extractables, and potentially polychlorinated biphenyls. Waste characterization samples should be analyzed for RCRA characteristics and TCLP contaminants.

Calumet Sag Channel Sample Analytical Results

	Canal Dock Pipe Chase	Canal Water Intake
Laboratory RD Number	52786	99843
Sample ID Number	34465	86258
Laboratory Report Date	11/13/92	07/05/94
Component		
Total Cyanide	NA	ND
Open Cup Flash Point	NA	>180 F
Reactive Sulfide	NA	114
pH	NA	7.4
Total Phenolics	NA	ND
Percent Solids	NA	36.9%
TCLP Arsenic	NA	ND
TCLP Barium	NA	0.320
TCLP Cadmium	NA	ND
TCLP Chromium	NA	ND
TCLP Lead	NA	ND
TCLP Mercury	NA	ND
TCLP Selenium	NA	ND
TCLP Silver	NA	ND
Total Chloromethane	ND	NA
Total Bromomethane	ND	NA
Total Vinyl Chloride	ND	NA
Total Chloroethane	ND	NA
Total Dichloroethane	ND	NA
Total Acrolein	ND	NA
Total Acrylonitrile	ND	NA
Total Trichlorofluorometh ne	ND	NA
Total 1,1-Dichloroethene	ND	NA
Total 1,1-Dichloroethane	ND	NA
Total Trans-1,2-Dichloroethene	ND	NA
Total Chloroform	ND	NA
Total 1,2-Dichloroethane	ND	NA
Total 1,1,1-Trichloroethan	ND	NA

Calumet Sag Channel Sample Analytical Results

	Canal Dock Pipe Chase	Canal Water Intake
Laboratory RD Number	52786	99843
Sample ID Number	34465	86258
Laboratory Report Date	11/13/92	07/05/94
Component		
Total Carbon Tetrachlorid	ND	NA
Total Bromodichloromethane	ND	NA
Total 1,2-Dichloropropane	ND	NA
Total Cis-1,3-Dichloropro ene	ND	NA
Total Trichloroethene	ND	NA
Total Benzene	0.054	NA
Total Dibromochlorometh ne	ND	NA
Total Trans-1,3-Dichlorop opene	ND	NA
Total 1,1,2-Trichloroethan	ND	NA
Total 2-Chloroethyl vinyl ther	ND	NA
Total Bromoform	ND	NA
Total Tetrachloroethene	ND	NA
Total 1,1,2,2-Tetrachloroe hane	ND	NA
Total Toluene	5.240	NA
Total Chlorobenzene	ND	NA
Total Ethylbenzene	1.720	NA
Total Xylenes	9.640	NA
Total Cumenes	4.600	NA
Total Acetone	ND	NA
Total Carbon Disulfide	ND	NA
Total Vinyl Acetate	ND	NA
Total Methyl Ethyl Ketone	ND	NA
Total Methyl Isobutyl Ket ne	ND	NA
Total 2-Hexanone	ND	NA
Total Styrene	ND	NA
TCLP Benzene	NA	ND
TCLP Carbon Tetrachloride	NA	ND
TCLP Chlorobenzene	NA	ND
TCLP Chloroform	NA	ND

Calumet Sag Channel Sample Analytical Results

	Canal Dock Pipe Chase	Canal Water Intake
Laboratory RD Number	52786	99843
Sample ID Number	34465	86258
Laboratory Report Date	11/13/92	07/05/94
Component		
TCLP o-Cresol	NA	ND
TCLP m-Cresol	NA	ND
TCLP p-Cresol	NA	ND
TCLP Total Cresol	NA	ND
TCLP 1,4-Dichlorobenzen	NA	ND
TCLP 1,2-Dichloroethane	NA	ND
TCLP 1,1-Dichloroethene	NA	ND
TCLP 2,4-Dinitrotoluene	NA	ND
TCLP Hexachlorobenzene	NA	ND
TCLP Hexachloro-1,3-but diene	NA	ND
TCLP Hexachloroethane	NA	ND
TCLP Methyl Ethyl Keton	NA	ND
TCLP Nitrobenzene	NA	ND
TCLP Pentachlorophenol	NA	ND
TCLP Pyridine	NA	ND
TCLP Tetrachloroethylene	NA	ND
TCLP Trichloroethylene	NA	ND
TCLP 2,4,5-Trichlorophen l	NA	ND
TCLP 2,4,6-Trichlorophen l	NA	ND
TCLP Vinyl Chloride	NA	ND

Canal Barrel Room Sample Analytical Results

Summary

Previous sampling events at the Canal Barrel Room have been conducted to document analytical results from samples collected from drums stored in the room. Past samples have been analyzed for polychlorinated biphenyls (PCBs). Nine of the ten drums sampled revealed non-detectable concentrations of PCBs; however, the tenth drum revealed PCB concentrations in excess of 10,000 parts per million.

Characterization Guidelines

Samples collected from drums stored in the Canal Barrel Room will vary based on what materials are suspected to be present. Existing data from this area is for testing of drums suspected of containing oil with PCBs. Waste characterization goals for materials tested in the Room should be based on suspected contents. Generally, the TCLP should be used to characterize unidentified wastes.

Canal Barrel Roan Drum Sample Analytical Results

	Drum Grabs Waste, Drum A	Drum Grabs Waste, Drum E	Drum Grabs Waste, Drum G	Drum Grabs Waste, Drum J	Drum Grabs Waste, Drum F	Drum Grabs Waste, Drum B	Drum Grabs Waste, Drum H
Laboratory IDNumber	108985	108986	108987	108988	109311	109338	109339
Sample ID Number	98587	98589	98591	98593	98590	98588	98582
Laboratory Report Date	10/31/94	10/31/94	10/31/94	10/31/94	10/31/94	11/03/94	11/03/94
Component							
Total PCB 1221	ND	ND	ND	ND	ND	ND	ND
Total PCB 1232	ND	ND	ND	ND	ND	ND	ND
Total PCB 1016 (1242)	ND	ND	ND	ND	ND	ND	ND
Total PCB 1248	ND	ND	ND	ND	ND	ND	ND
Total PCB 1254	ND	ND	ND	ND	ND	ND	ND
Total PCB 1260	ND	ND	ND	ND	10,709.500	ND	ND
Total PCB	ND	ND	ND	ND	10,709.500	ND	ND

Canal Barrel Roan Drum Sample

	Canal Barrel Room Oil, Drum I	Canal Barrel Room Oil, Drum D	Canal Barrel Room Oil, Drum C
Laboratory IDNumber	111189	111190	111191
Sample ID Number	01284	01286	01285
Laboratory Report Date	11/29/94	11/29/94	11/29/94
Component			
Total PCB 1221	ND	ND	ND
Total PCB 1232	ND	ND	ND
Total PCB 1016 (1242)	ND	ND	ND
Total PCB 1248	ND	ND	ND
Total PCB 1254	ND	ND	ND
Total PCB 1260	ND	ND	ND
Total PCB	ND	ND	ND

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August 25, 1997

Allen T. Wojtas
United States Environmental Protection Agency
Region 5
Enforcement and Compliance Assurance Branch (DRE-8J)
77 West Jackson Boulevard
Chicago, IL 60604

Re: RCRA Section 3007 Information Request
Clark Refining and Marketing, Inc.
EPA ID No. ILD 005 109 822

Dear Mr. Wojtas:

Enclosed please find Clark Refining & Marketing, Inc.'s first response to the above information request.

Very truly yours,

Russell R. Eggert

6220790.1 82597 1018C 95228409

bcc: Richard Keffer (w/encl.)
Bill Irwin (w/encl.)
John C. Berghoff, Jr. (wo/encl.)
Tom Kuslik (wo/encl.)

CLARK REFINING & MARKETING, INC.'S FIRST SET OF OBJECTIONS AND RESPONSES TO RCRA SECTION 3007 INFORMATION REQUEST OF JULY 30, 1997

Clark Refining and Marketing, Inc. ("Clark"), pursuant to the schedule and priorities established by Associate Regional Counsel Rodger Field on August 11, 1997, objects and responds to the information request under Section 3007 of the Resource Conservation and Recovery Act received on July 30, 1997 as follows:

General Objections

1. Clark objects to the information requests to the extent that they seek material beyond the scope of EPA's authority under RCRA.

2. Clark objects to the information requests on the ground that they are repetitive, duplicative, and unreasonably burdensome.

3. Clark objects to the information requests to the extent that they seek information protected by the attorney-client privilege or the attorney work product doctrine.

Responses

Subject to and without waiving the foregoing objections, Clark states:

Request

2) Clark has indicated that the spent caustic placed in Tanks 28 and 29 are not hazardous waste because the material is shipped to International Paper, Merichem, and GATX Terminal as a product.

   a) Provide any documentation relating to shipments of spent caustic from Tanks 28 and 29 as a product since January, 1993, including, but not limited to contracts, bills of sale, invoices, shipping documents, and other similar documents.

   b) Provide any MSDSs or other documentation corresponding to shipments of spent caustic since January 1993.

c) Provide any available sampling and analytical information corresponding to the spent caustic.

d) Residues were observed beneath the valves and inside the dikes of Tanks 28 and 29 at the refinery. What are the residues? Is the residue removed periodically? If so, how is the material managed? If the material is disposed, provide any sampling, analytical, and shipping documentation.

e) Based on analytical results from samples collected to determine compliance with the Clean Air Act requirement, the spent caustic contains benzene. Does the spent caustic have to be processed to remove benzene and oil prior to its use as an ingredient in another industrial process? If so, who processes the spent caustic, and what is the disposition of the materials removed from the spent caustic?

f) Provide any documentation related to your answer to this question.

Response

2. a)b)c)f) -- see attached.

d) Clark objects to this question as vague, imprecise and impossible to answer as posed. Subject to and without waiving this objection or the general objections, and assuming the reference to be to the materials sampled by EPA's contractor, analytical results are attached as Attachment 2(d).

e) Clark objects to this question as vague and because it misstates the facts. Subject to and without waiving these objections or the general objections, the spent caustic does not have to be processed to remove benzene and oil prior to its use as an ingredient in another industrial process. Two types of caustic are shipped, sulfidic caustic and cresylate caustic. On information and belief, based upon information from Mericham, for the sulfidic caustic, if the sulfide content is less than 5% it is used, without treatment, to neutralize cresylate acid at the Merichem

facility in Houston. If sulfide content is 5% or greater, it is used as a raw material, without treatment, in the pulp digester of a paper mill.

Cresylate caustic is shipped to Merichem for cresylic acid extraction. On information and belief, Merichem pH adjusts the product with CO_2, freeing the cresylic acid and forming sodium carbonate. The cresylic acid is sold as a product by Merichem. The sodium carbonate is shipped as a product to paper mills. To Clark's knowledge there is no processing, at any stage, to remove benzene or oil in the spent caustics or derivatives.

Answering further, and assuming that the reference in the first sentence is to samples collected and analyzed in September, 1995, Clark does not believe that those data show that the caustic contained benzene because the environmental medium of the sample analyzed by the laboratory was different from that sampled at the refinery, and the reported data are therefore not valid or reliable.

Request

3) Clark representatives told the NEIC inspectors that material from clean out of the 59 sump is combined with other materials, such as materials from the overflow pit, and shipped off site for disposal using a manifest. The waste codes assigned to the shipment typically include D018, K049, K050, K051, F037, and F038.

   a) When the 59 sump is cleaned out, and before the material is combined with other materials, how is the waste from the sump managed?

   b) Is the material from the sump a listed waste, and does the material exhibit hazardous waste characteristics?

   c) Provide any sampling and analytical information related to the material from the sump.

   d) Provide all documentation related to your answer to these questions.

Response

3. Clark objects to this question on the ground that it misstates the facts. Subject to and without waiving this objection or the general objections, Clark states as follows:

a) Liquids from 59 sump are pumped to tanks 63 and 65 for processing through the crude unit. Solids are vacuumed out, centrifuged, placed into an appropriate container and delivered to a licensed hauler for off-site disposal at a permitted facility.

b) The liquids from 59 sump are not a waste. Solids are listed hazardous wastes. Clark has not (and is not required to) analyzed the solids to determine if they also exhibit hazardous waste characteristics.

c) None.

d) See attachment 3(d).

Request

9) According to Clark's June 27, 1997 response to the May 29, 1997 Clean Air Act information request, Clark has received wastewater shipments from off-site facilities on the following dates: May 24, 1995, October 5, 1995, March 7, 1996, March 11, 1996, and April 3, 1997.

a) Who discovered the water in the tanks(s) owned or operated by Martin Oil, and on what date? Indicate the location, designation (number or name), and capacity of each affected tank. Were any samples collected of the contents of the tank(s)? If so, who collected the samples(s), how many were collected, what were the results of the analysis?

b) Who at Martin had conversations with Clark employees regarding the water in the tanks and the transportation of the water/gasoline? Are there any conversation records? Who contacted the vacuum truck and/or other transportation company or companies?

c) Provide a description of the transportation route, and copies of any manifests, bills of lading, weigh tickets, or other documentation associated with the vacuum truck shipments or other transportation of water/gasoline from the Martin Oil facility to Clark.

d) After the scheduled vacuum truck shipments of water/gasoline were canceled on or about April 3, 1997, what was done with the water/gasoline remaining in the tank(s)? Provide any documentation of the management of the material.

e) Provide all documentation related to your answers to these questions.

Response

9) Clark objects to this question because it misstates the facts and mischaracterizes the materials in question. Subject to and without waiving this objection, Clark states:

a) Unknown; unknown; unknown.

b) Mike McConnell; none identified at this time; Clark made the contacts.

c) See documents produced in Clark's June 27, 1997 response to the May 29, 1997 request, control numbers 0697-00089 to 0697-00093, , which are hereby incorporated by reference.

d) Clark is informed by Martin and believes that the material is in a tank or tanks at the Martin facility.

e) See above.

11) Provide the following notarized certification by a responsible company officer:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in responding to this information request for the

production of documents. Based on my review of all relevant documents and inquiry of those individuals immediately responsible for providing all relevant information and documents, I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Bill Irwin
Interim Environmental Manager